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An Address
UPON
THE SURGICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.

BY ARTHUR E. BARKER, F.R.C.S. ENG.,
SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

IN considering this subject it will be well in the interests of brevity to define at once as comprehensively as possible the factors in obstruction which we have to treat surgically. These may be conveniently arranged under three heads. Some are purely (1) mechanical or anatomical factors; some are (2) physical factors; and some, again, are (3) vital factors. It would be impossible in the short time allotted to us to deal with all these in all their bearings and only the most important of each can be noticed.

1. Under the head of "anatomical factors" will come the consideration of the part of the intestinal tract which is the seat of the stoppage. This has an important bearing upon the treatment in so far as it claims the greatest promptitude of action and the most delicate handling of the parts involved. It is well known that the higher up the obstruction the earlier and the more acute, speaking generally, are the symptoms. On the other hand, the lower down the stoppage the greater the amount of retained matter and the more septic is it, while marked symptoms set in as a rule later. It is also almost certain that operations involving structures high up in the abdomen make a heavier demand upon the patient's powers than those done on parts low down. The character of the obstruction may best be placed perhaps under the heading "mechanical," whether it be a band, a volvulus or an intussusception, or an inclusion of bowel in one or other of the several pouches of the peritoneum. All these variations in the form of mechanical cause of obstruction have an important bearing on the treatment and must be constantly borne in mind, though we cannot dwell upon them here. It is enough to say that they are relatively the least important of all the factors. They have to be removed and this is a matter of mechanics and comparatively easy.

2. Of far more importance are the factors which may be grouped under the head of "physical changes" in the bowel. These include the anæmia at the point actually constringed, the venous engorgement of the parts distal to the constriction which is common, the consequent œdema, thrombosis, and frequently sphacelus or ulceration of that portion which are inevitable if there is delay in the treatment.

3. But under the heading "vital changes" come the most important factors of all in stoppage of the bowels. It may be a simple matter to find out and to divide a band, to untwist a volvulus, or to unravel an intussusception or other mechanical obstruction and thus to relieve the venous engorgement and its attendant physical evils. But in many, if not in most, of the cases of obstruction as they reach the surgeon the trouble does not end here. We have still to contend against both local and general "vital changes" in the body and these, I venture to think, are nowadays our greatest difficulty, since the dangers of mere opening the peritoneum have receded into the background. Above an obstruction, say low down, we have much retained fæces. In these we have swarms of bacteria existing under the most favourable conditions for multiplication. The retained matters are being constantly driven against the blocked spot by peristalsis and as a consequence the bowel becomes more and more congested and hypersecretion takes place. The micro-organisms fabricate in time large quantities of toxins for which there is no escape. Consequently, they are absorbed into the system by the usual channels, producing profound general depression of vitality with fever and often lung and kidney complications, and besides this soaking the congested bowel wall for a long stretch above the constriction, further devitalising it, causing paresis or paralysis of its muscular tissue, and preparing the way for that migration of bacteria through the bowel wall into the peritoneum which we now know takes place even without any breach of continuity if the vitality of the bowel has fallen below a certain level. As a consequence we have in advanced cases to deal with infection of the peritoneum even without perforation and, moreover, after an obstruction has been relieved such peritonitis may start from an unopened bowel soddened with toxins and loaded with putrid material which in its paralysed condition it is unable to get rid of by propulsion.

All these factors are met with in varying degrees in almost every case of intestinal obstruction with which surgeons come in contact from that caused by a band to that due to a volvulus. And if the surgeon is to treat the case rationally they must all be borne in mind and be met by special measures in each case. It will only be possible here to sketch in the merest outline the surgical methods to be employed in dealing with such conditions on the reasoning already given in brief.

Obviously in cases where an early diagnosis has been made and few or none of the *physical* or *vital* changes alluded to are present our only care is to restore as soon as possible the anatomical integrity of the intestinal tube. We have nothing to fear from the physical or vital changes in the gut, peritoneum, or system generally. This is quite clear from our experiences with recently strangulated herniæ. We divide the constriction, replace the bowel, and expect and obtain, as a rule, rapid recovery. The same is the case where a band is divided *early* in a case of *internal* strangulation or where an intussusception is unravelled or a volvulus untwisted. It is purely and only a question of mechanical relief. Clearly, then, it is unnecessary to labour the claim for an early diagnosis and prompt surgical action. More depends upon these than upon any particular method or details, however good they may be.

Unfortunately, however, delay both in diagnosis and surgical interference still too frequently takes place in cases of intestinal obstruction and when at last an operation is undertaken we are face to face with physical and vital conditions, local and general, which continue to be dangerous or even disastrous after the mechanical obstruction has been relieved. What can be expected of surgical interference where a bowel for a long distance above the obstructed point is in a state of paresis or complete paralysis and is loaded with pints of putrid, fermenting fluid and the walls of which have almost or entirely lost their vitality? Such a bowel after release of the obstruction may subsequently necrose and perforate, or, even without any breach of continuity, its loss of vitality may permit the passage through it of virulent organisms present in millions which do not pass through healthy walls. How little can surgery do when as a consequence of these changes the system is saturated with toxins depressing the functions of every organ and tissue in the body and probably already initiating well-known pulmonary and renal diseases. Surgical interference involving a long operation undertaken under these conditions is *necessarily* and *inevitably* imperfect in the highest degree and, as we know, is often futile. As if to emphasise this point, while writing the foregoing sentence a few evenings ago I was telephoned for to see a case of intestinal obstruction at hospital which had just arrived. I put down my pen and went at once, but only to see the patient expire just as I reached the bedside after getting rid of a large quantity of stercoraceous vomit. I have since heard that the post-mortem examination showed a band obstructing the ileum low down and that the latter for a long distance above was in a most unsound condition and could not have been left in the abdomen with any prospect of recovery.

But in turning now to the details of the operative treatment, let us suppose that a case though bad has not yet reached quite such a hopeless stage as that just mentioned and let us try to formulate rules of procedure. This can be modified according to the stage of obstruction at which the patient has arrived.

The first thing is to ascertain whether the stomach has been emptied. It may be stated by the friends that vomiting has just taken place, but this should not deter us from using the stomach-tube and we shall be surprised in many cases by the quantity of foul matter which can be removed even where vomiting has been free just before. To leave this matter in the stomach is to court disaster either during the operation, if a general anæsthetic is employed, or later. The lungs and the kidneys have to be considered as well as the intestine itself, which, already paralysed, is after operation in the worst possible condition for propelling its contents

downward. This washing out should be repeated over and over again before the patient is anæsthetised.

The mouth and throat should then be washed out with some antiseptic fluid, such as chlorate of potash or sanitas, and a warm drink of brandy-and-water should be given if the stomach is empty. If the patient is very feeble it is also sometimes of the greatest use to instil subcutaneously half a litre of a 5 per cent. solution of glucose or of normal saline. This has not only the effect of supplying the tissues with the water which has been lost by vomiting, and by the lungs, skin, and kidneys, but also gives the latter organs a better chance of eliminating toxins in diluted form and consequently with less damage to themselves. The glucose, too, is a food and in 5 per cent. solution is isotonic with the blood and easily borne by the tissues into which it is injected. If glucose and normal saline are used together the first should be 2½ per cent. and the salt 0·45 per cent., which I have found to be isotonic. Alone they are respectively 5 per cent. and 0·9 per cent. A rectal injection of warm normal saline solution and half an ounce of brandy is also desirable.

The further preparation for operation includes all the precautions of asepsis. The society has so recently had the advantage of hearing Mr. C. B. Lockwood upon this subject that nothing further need be said upon it now except that I should like to express the conviction, based upon an experience of asepsis pure and simple for many years, that the less *chemical germicides* are used once the skin has been cleansed the better for the result of the operation. They should never be used within the abdomen.

The patient should, of course, be kept as warm as possible by being wrapped in wool and surrounded with hot bottles, the room being heated to at least 70° F.

The choice of an anæsthetic is a matter for each surgeon to decide for himself. But for my own part I feel more and more every day that these operations should be done under local analgesia, wholly or in part. This feeling is not due to any special fear of ether or chloroform in ordinary cases. But in those under discussion, where the respiration is often embarrassed by a distended abdomen and where the vital powers are lowered by want of food, vomiting, and in many instances by advanced toxæmia, I have a very strong conviction that the chances of recovery are very much diminished by general anæsthesia. It is an easy thing now to render the skin, muscles, and neighbouring peritoneum absolutely insensitive to pain, and as the intestines themselves are insensitive they can be cut, stitched, and handled without any suffering. The root of the mesentery and its lateral reflection are the crux and if it is necessary a little chloroform can be given for the necessary intra-abdominal manipulation which may only last a few minutes. But it is a very different thing to give a general anæsthetic for, say, five minutes and to keep a patient even lightly under for from 50 to 100 minutes. In one case there are usually no depression and no after-sickness; in the other there are usually both. For children and for certain nervous young people local analgesia is unsuitable, but this class of patients, as a rule, bear chloroform well. It is for the mature, and particularly the aged, that I would plead for a more extended use of local analgesia. In its most recent development it is an enormous improvement on the form it took up to a year ago. But the details must be mastered by much practice in a variety of cases before it can be employed with confidence.

When the abdomen is opened it is a most valuable rule to search first of all for a loop of *empty* bowel in the right iliac fossa as a guide to the obstruction which in the majority of cases is low down. This is a far easier method of finding the point of stoppage than to search along the distended gut which is proverbially difficult to manipulate and to control.

The actual release of the obstructed bowel is a purely mechanical matter and will be carried out by different surgeons in various ways but it is certainly easier to work from the empty bowel towards the distended portion than *vice versâ*. If a band is found it is a simple thing to divide it. If an intussusception is present we only follow the path of wisdom if we adopt Mr. Jonathan Hutchinson's advice of long ago and always attack it from the distal end and avoid all pulling from the proximal. Only one other point I would venture to plead for in this connexion—namely, that all this should be done as far as possible within the abdomen. I am no friend of eventration and believe it to be in most cases not only hurtful but unnecessary. One is tempted, of course, to do it in cases of great distension. But even here it is better to draw forward a small portion of the most distended gut and to slit it open over a basin and to empty it than to expose large tracts externally. It must not be forgotten that the mere evacuation of gas and liquid fæces revives the patient and where great asthenia is present, of course, in some cases the operation should go no further until the abdomen is emptied, but such cases are in my experience few nowadays.

But short of these almost hopeless cases others give us nearly as much anxiety where several feet of bowel above the obstruction are distended, paralysed, sodden, and discoloured. From experience we know that this bowel is most probably ulcerated internally not only at and just above the constriction but often for a foot or two upwards. What are we to do in such a case? To return the bowel after simply relieving the obstruction is to allow pints of fermenting fæces either to remain stagnant or to escape into the empty, and as it were hungry, bowel below with all the risks of more abundant absorption of the poison than before. If this is not done one of two alternatives remains. Either we must temporarily drain the distended gut or boldly resect several feet of it with their contents and unite the upper and lower portions. Of the two I prefer the latter course. By this means we remove at one sweep all the septic bowel and its contents and with these the greatest dangers to the patient. These are the dangers of peritoneal infection with or without sloughing or perforation of the bowel and of toxæmia from absorption of its liberated contents as they pass into the intestine below. For the last five years I have generally acted on this principle with results far superior to any I was able to obtain previously. But I have so recently written upon this subject in detail with an analysis of all the cases which led to this rather bold conclusion that it is natural to hesitate to take up your time by going over the ground again.[1]

One point is perfectly clear from the experience of these recent cases—namely, that there is no more shock from removing several feet of bowel than there is from taking away a few inches. Again, we need to be reminded that the anastomosis of the remaining parts is equally easy or difficult independently of the length of the part resected.

Permit me to allude to two cases of acute intestinal obstruction in which this course was adopted with perfect success. The gut removed in each case is on the table. The first was that of a feeble old woman, aged 78 years, with an intermitting pulse when admitted. The cause of the obstruction was a band and the gut for quite two feet was black and almost gangrenous and was surrounded by more than a pint of dirty stinking fluid which gushed out when the abdomen was opened. Here I excised five and a half feet and joined end to end. There was *no* shock and recovery was perfect under one dressing. The patient returned to show herself quite well a year later and is, I believe, still well four years after operation. (N.B.—The bowel was extensively ulcerated above the obstruction.) The next case was that of a woman, aged 52 years, with a gangrenous femoral hernia. I had to go more than six feet above the obstruction to find fairly healthy bowel. Lateral anastomosis was done and six and a half feet of ileum were cut away between the point of junction and the obstruction. Here, too, there was no shock and the recovery was complete. But it is interesting to note that there was much very foul diarrhœa for some days. On the third day after operation the patient had three copious putrid stools, on the fourth day she had five, and on the fifth day six, and then there was no action of the bowels until the ninth day, but still a loose motion, though not so foul. Here the evacuations must have come from above the point of junction, for the bowels were well opened on the fourth day of strangulation after stercoraceous vomiting had set in. Neither of these cases could have recovered if it had been possible to replace the bowel loaded with putrid fæces. They would have died either from perforation or toxæmia, or from the exhaustion of diarrhœa in getting rid of the festering material stored up above. Let it be remembered that if the bowel be distended to only two inches in diameter every foot of it will contain more than one pint of putrid material.

On the question of shock from these operations I should like to be permitted to mention briefly one other case of recent occurrence. This was the case of a patient under the care of Dr. F. Roberts and was one of the

[1] THE LANCET, May 30th (p. 1496) and June 6th (p. 1566), 1903.

worst cases of typhoid fever he or my other colleagues had ever seen. The woman, who was 33 years of age, was in the third week of the disease. She had suffered from severe hæmorrhages, had had severe bronchitis, and on the day of operation had a temperature of 105·6° F. with rigors. Symptoms of perforation having come on I was asked to operate. Dr. F. J. Poynton, who was kind enough to see the patient with me in the unavoidable absence of Dr. Roberts, gave it as his opinion that she would die if a general anæsthetic was employed but that if an operation could be done under local anæsthesia without shock it ought to be done at once. I opened the abdomen under β eucaine analgesia and found extensive gangrenous patches over a length of intestine and peritoneal effusion. As all were covered with lymph and threatening to give way I resected the whole loop, including 27 inches, and joined end to end (specimen shown). Again, according to the physicians in charge, there was no shock and the next day the patient was decidedly better with improvement of pulse and temperature. Fresh hæmorrhage set in later and she died as the result. There was ulceration in the remaining gut and throughout the whole colon down to the rectum, and apparently several of these ulcers had furnished the fatal hæmorrhage. The line of suture was perfect in every respect. The pulse had improved until the bleeding set in. I only mention these cases from among a number to illustrate the fact that there is not necessarily any shock from enterectomy.

The conclusions I should venture to draw from the foregoing reasoning are these: 1. That too much stress has been hitherto laid upon the mere removal of the mechanical stoppage and not enough upon the evacuation of the putrid material which is killing the patient. This is only to repeat the dictum of an old member of the society, Mr. Greig Smith. 2. That the older method of emptying the bowel by establishing an artificial anus is unsatisfactory as the bowel is in a state of paresis or complete paralysis and only expels its contents very slowly and until it is cleaned out the cause of the paralysis remains in great part, and you will remember Mr. Greig Smith's description of sitting up all night watching the gradual emptying of the bowel. Our experience teaches us this, and that this method of treatment is unsatisfactory any careful analysis of a long series of cases reveals, as I have endeavoured to show in the paper just referred to. 3. That the best course in many of these cases, probably in all that are still within the reach of any operative procedure, is to resect the tract of paralysed and distended bowel at once. This would not, of course, apply to recent cases where the bowel is not seriously damaged by the retained fæces and is manifestly sound at and above the seat of obstruction. But excluding these there remains unfortunately a large group of cases where we are face to face with a disastrous state of things which requires very bold action on our part.

On the question of drainage of the abdomen or not in these cases each surgeon will act upon his own judgment in particular cases. For my own part, I am in most cases in favour of closing the abdomen at once unless there be general peritonitis, having a great belief in the power of the peritoneum to take care of itself. The reasons for this would lead us too far. But I must admit that I have lost a case almost certainly from closing without drainage after resection of the diseased part.

The after-treatment of these cases is of extreme importance. They should in all instances sit up in bed from the first as much as possible and only lie down, preferably on one side or the other, for sleep, so as to overcome the tendency to hypostatic pneumonia.[2] They should begin at once to take a mixture of ten grains of carbonate of bismuth three times daily which, with Kocher, I believe to be the best intestinal antiseptic. Albumin water, with one drachm of brandy, should be given from the first by the mouth in small quantities and nutrient enemata and instillation under the skin of normal saline solution or 5 per cent. solution of glucose is recommended as a routine. Half a litre morning and evening may be given if necessary. Hitherto, perhaps, we have been too sparing of food by the mouth. In small quantities and light it may be given early, at all events in cases where the diseased bowel has been resected.

In many cases diarrhœa is a very troublesome complication. It is the natural effort to discharge a quantity of putrid retained fæces and is often mixed with blood and mucus. It is not well to check it too much as this material must be evacuated before the patient is safe. Here the bismuth plays a useful part in cleansing the gut, and so arresting the diarrhœa.

In some cases, especially intussusceptions, the temperature rises to a high degree after liberation of the gut. The explanation usually given of this is the passage into the circulation of blood which has been stagnant in the included bowel long enough to be saturated with toxins. This is probably correct. Cold sponging and warm drinks have proved the best treatment for this condition so far as I have seen in many cases. If the fever is due to pulmonary emboli or pylephlebitis we can only sustain the general strength by the use of the usual stimulants.

It must be obvious that in a subject such as this many other points might be discussed but time fails and only an outline can be given as a basis for debate.

[2] The cases from which I excised 5½ feet and 6½ feet sat up at once and the old woman, 78 years of age, was in an armchair by the fireside on the sixth day.

SOME REMARKS ON PYOSALPINX BASED UPON NOTES OF 23 CASES.

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A COLLECTION of cases of one kind is always interesting to those engaged in similar work, and still more so if it covers a number of years and so reflects to some extent the evolution of the operator's views and of the measures employed. Although the number of cases is not large, inasmuch as cases occurring in connexion with fibroid tumours and some other complications are not included, it will be seen that the list extends in date from 1894 to 1903, a period of ten years. During the last decade a great amount of activity has been devoted to pelvic surgery and the changes have been many and radical. Thus in 1894 abdominal drainage by Keith's glass tubes was the rule after any operation upon structures in the pelvis, especially if any formation of pus was present. The powers of the peritoneum with regard to the disposal of effete material were but imperfectly known and still less trusted, and the differing virulence of pus was not so clearly appreciated as it is now. Since these two facts have received the due recognition of their force the old idea that drainage was in all cases imperatively necessary has ceased to be dominant and the dangers of the employment of drainage-tubes themselves have been more clearly recognised. In Case 8 there can be but little doubt that the tube contributed to the production of a fæcal fistula by its pressure upon the bowel. The same thing was threatened in Case 5. Glass tubes required frequent movement or they became impacted by the entrance of omentum or other structures into their openings below the surface. They were rotated and slightly lifted from time to time. During such movements it was very easy for a small knuckle of intestine to slip beneath their lower extremity and to become nipped between this and the concavity of the sacrum behind. Moreover, the opening into the peritoneal cavity intended as a means of exit for matters within was of necessity also a means of entrance for bacteria from without, and pus which had become sterile might easily become a nidus for the development of new and virulent organisms which thus were freshly implanted. The fact that the long retention of pus in a closed cavity, such as the Fallopian tube became, resulted in the death of the germs which had originally produced it, and that what was left was nothing more than a collection of fattily degenerated cells was for a long time but imperfectly understood and appreciated. When it was understood the apparent necessity for drainage of any undetected and unremoved particles of such a fluid disappeared. Then Clark, Muscatello, and others demonstrated the wonderful powers of absorption of the peritoneum which, when unhampered by the presence of drainage-tubes, quickly cleared away all dangerous material from its interior, and the necessity, if this were to be complete, of the re-formation of a perfectly closed cavity, in order that the necessary intra-peritoneal currents might once more come into play.

The presence of this glass tube was harmful in two other ways. The more important was the fact that a weak point

was thereby produced in the abdominal wall, from which a post-operative ventral hernia was almost surely developed. The presence of a glass tube projecting from the abdominal wall also necessitated the maintenance of the patient in a definite position. Material which had to be removed was supposed to drain towards the lowest point, the bottom of Douglas's pouch, from whence it was drawn up by an exhausting syringe, and in order that this might be the case it was necessary to keep the patient in such a position that the bottom of Douglas's pouch should always be the lowest point. All abdominal surgeons know what a difficulty there is in restraining the restless tendencies of a patient during the first few days after an abdominal section. The necessity for perfect stillness in one position amounts in some patients to positive torture, to say nothing of the probability of the formation of bed-sores over the bony points thus subjected to prolonged pressure. If for this alone the abandonment of the glass tube was a great relief to both surgeon and patient. And when Clark proved that in many cases the post-mortem examination showed that the tube itself had rapidly become inclosed in a surrounding sheath of lymph shutting off all the rest of the peritoneal cavity, whilst collections of pus existed around it, within a few centimetres of its circumference, thus demonstrating its inutility for the very purpose for which it was used, its retention at once became impossible. Muscatello demonstrated that foreign material was removed from the peritoneal cavity, when that was intact, by peritoneal currents which carried it towards the lymphatics of the diaphragm; that particles of carmine, for instance, injected into this cavity could first be recognised in these lymphatics and next in the mediastinal glands. Case 16 would appear to support the truth of these observations. Some infective material evidently found its way into the abdominal cavity in this case. The general cavity escaped in consequence of the measures adopted—accurate closure, followed by free purgation—and general peritonitis was averted, but a subphrenic abscess formed which required evacuation.

The difference in the intensity and duration of symptoms in various cases is noteworthy. Although in the majority some direct connexion between traumatism during labour or the poison of gonorrhœa could be detected, and a long period of invalidism traced between the date of infection and that of operation, during which symptoms were constantly more or less present, this was not the fact in all. In Case 16, already referred to, although two large pus sacs were found, no symptoms at all had been noticed and the patient declared herself to have been in perfect health until 14 days before admission to the hospital. (See also Case 23.)

One point in diagnosis is worth reference. Some years ago Cleghorn of New Zealand drew attention to the presence of a pulsating vessel in the fornix on the same side as an ectopic pregnancy and suggested that this would be found to be a differentiating symptom, marking such cases off from others in which a similar pelvic mass could be detected. But Case 5 would appear to show that any mass which from its position, or in consequence of superior adhesions limiting its upward development, is forced to press outwards and downwards, so as to displace the uterine artery in the same direction before it, will produce this vaginal pulsation; so that the value of this symptom as indicating the presence of ectopic pregnancy is greatly discounted.

The question of how best to attack these collections of pus, especially in acute cases, is a difficult one, and one in which the dispute between what may be called abdominal and vaginal operations reached its highest point. There seems to be little doubt that in an acute case when the virulence of the contained bacteria is still great, the removal of these sacs through the abdominal wall is extremely risky. Adhesions are plentiful and firm and the omentum has often been utilised to close some point of leakage such as the abdominal end of the Fallopian tube. Should the adhesions be sufficiently light to justify an attempt at peeling them off it is quite possible that a sudden gush of pus may signalise the removal of this safeguard, and this pus may reach healthy peritoneum and light up general peritonitis; such an escape of pus occurred in Case 15. Even if this does not happen the walls of the containing tube are greatly thinned by their distension and may give way at any stage during their enucleation. This occurred in Cases 7, 11, 12, and 16. Of course, the Trendelenburg position, by enabling the surgeon previously to pack in sponges which will absorb these fluids at once, has greatly minimised this danger, but it cannot be said to have removed it entirely. It is obvious that separation has to be done in advance of the sponges. If they could in all cases be previously packed below there would be no posterior separation to be done; and not only is this so, but occasionally the amount of fluid which suddenly escapes is so great as immediately to soak through the comparatively thin sponge, which alone can find space in which to lie, and so comes into contact with the raw surfaces produced and even with the unaltered peritoneal surfaces above. This risk is, of course, practically unimportant should the case be chronic, the bacteria dead, and the escaping liquid merely fattily degenerated débris floating in a sero-purulent fluid; but who can determine this beforehand? And if the bacteria are not dead, if the escaping fluid is still infective, possibly virulent, the risk is very great.

It would appear to be far safer to open these acute abscess cavities from below through the vagina. Case 11 was such a case as that referred to in the last paragraph. In Cases 17 and 21 the time which had elapsed since the date of infection was so recent and the patients themselves were so acutely ill that there could be little hesitation as to the route to follow. The pus was evacuated through the vagina and recovery was prompt and rapid, whilst the other patient (Case 11), whose pus sacs were enucleated through an abdominal opening, died. Some of these collections can be felt from the vagina and then, too, there is but little hesitation in coming to a conclusion; the real difficulty arises when they cannot be felt from this canal, when adhesions above prevent their descent into Douglas's pouch, and their removal in this direction necessitates the contemporaneous removal of the uterus also before they can be reached. Should there be any hesitation in doing this? Usually the inflammation which has produced the tubal or ovarian abscess has also so disorganised the uterus that its preservation simply means retention of a perpetual menace to the sufferer's health; if both tubes are mere pus sacs the uterus can never again, one would imagine, be of any service and may be sacrificed without any real loss. Even if this be admitted the difficulty in some cases may not be wholly removed. In one case, not in the present series, after removal of a fibroid uterus with two pus tubes the right ovary was found separated from the rest and adherent to the fascia over the psoas muscle in such a position that it could not have been reached and it is doubtful if it could even have been detected through the vagina even after the clearing away of the uterus; and another difficulty arises when the operation has to be undertaken, as it occasionally has, in women who have never borne children, whose vagina is therefore undilated, and in whom the hymen itself may be present. It is difficult to understand how the condition arises in such cases. One of the usual causes, septic infection after a labour or miscarriage, is obviously excluded in consequence of the anatomical conditions present. In many the suspicion of gonorrhœa seems to be equally impossible. Is it possible that masturbation in women may produce tubal inflammation? I am not aware of any cases which definitely prove this point; and, indeed, evidence which might settle the question would be extremely hard to elicit.

The duration of the operation in some of these cases is considerable. Although the time expended may be due to some extent to the personality of the operator it is not entirely so. Separations of adherent viscera, when these viscera contain septic material, as the intestines do, must be done cautiously and patiently. Undue hurry may easily lead to tearing of their walls and thereby the production of greatly increased and needless risk, whilst the duration of the work is also lengthened. In such cases the resultant shock is certain to be great. I have been much impressed by the notable effects produced by transfusion of normal saline solution in these cases. Case 22 undoubtedly owed its success to this measure; and I am inclined to look upon it, not only as filling the blood-vessels, which is its primary object, but as assisting markedly in the removal of any toxins rapidly from the system. But that it should be introduced into the veins of the patient is open to question. When necessity for it arises it requires to be done at once. By the very circumstances of the case the veins are empty, collapsed, difficult to find, and still more difficult to enter. Valuable time is lost in searching for, and then in introducing, the cannula *secundum artem*. It is far more easy, and therefore far more quickly effectual, to pass the hollow needle into loose connective tissue such as is found in abundance

beneath the breast or in the axilla; and, so far as I have seen, the fluid is almost as quickly utilised as it would be when passed directly into a vein. Moreover, if it is done beneath the left breast the heat of the injection itself must have a distinctly stimulating effect upon the heart, lying directly beneath it. I am not sure also, in order to gain the second object, that of rapid dilution and removal of toxins, that it is repeated sufficiently often, or for a sufficient number of times. Most surgeons, I believe, use rectal high injections of saline solution during the first few days but it seems open to question whether precisely the same result is obtained; whether a highly osmotic fluid-like saline solution may not carry into the system certain toxins from so septic a canal as the intestine which would be much better left outside. Such a possibility could not occur were the fluid merely absorbed from clean connective tissue.

Shock is, indeed, one of the greatest dangers immediately to be feared, and anything which lowers the vitality of the patient should be avoided if possible. Loss of bodily heat is one very potent factor in this direction. Most of our operations at the present date are carried out on metal tables. If these tables are heated sufficiently to remain warm during a long operation they must at first be uncomfortably hot. If they do not remain warm they will abstract heat from the patient lying upon them and so decrease his vital resistance. Many plans have been adopted to avoid this, but, so far as I have seen, without great success. If metal cases containing hot water are used they render that portion of the table which has to be raised in order to obtain the Trendelenburg position far too heavy. In this position also the hottest point will be that towards which the water gravitates—that is, the shoulders, where it is not wanted. By dividing the metal case into several compartments this may be avoided, but the whole thing is very cumbrous and interferes with the sometimes rapid change of position required. Lately I have had a rubber bed constructed which is made up of a succession of transverse rubber cylinders containing hot water which has proved to be at once light, easily managed, and very effective. I feel certain that in numerous instances its use has made all the difference by preventing loss of bodily heat. In a case not many weeks since, in which the abdominal cavity was open for over two hours, the subsequent shock was extremely slight and recovery was correspondingly rapid.

CASE 1.—E. 25. Mrs. ——, aged 24 years, a primipara, had been confined six weeks previously to admission on April 13th, 1894. She had been attended by a midwife. The confinement was easy and she rose on the twelfth day. The lochia were red for five weeks, they ceased one week before examination, there had been no change in colour, and they ceased rather suddenly. At the same time acute pain began in the lower abdomen and had continued ever since. Bimanual examination under chloroform showed the uterus drawn up, the os being on a level with the vaginal vault, the uterus itself enlarged and somewhat drawn forward and fixed just above and behind the pubis. On its right was a rounded cylindrical mass lying transversely; on its left a more irregularly shaped one, the upper limit rising above the level of the fundus uteri and filling up the upper part of the broad ligament. The mass to the right was separable by a groove from the uterus, that on the right was continuous with it. A fortnight later clear evidence of pulmonary tubercle was present and an operation appeared thereby to be counter-indicated.

CASE 2.—Book 1, 22. Mrs. ——, aged 46 years, was admitted on Sept. 26th, 1894. Three years previously the patient had vaginal hæmorrhage at the menstrual period lasting for three weeks, accompanied by some increase in the size of the abdomen. The swelling disappeared and the periods became regular. For the last two years the swelling had returned, the abdomen becoming again gradually larger. For the last year there had been general and continuous abdominal pain. An ovarian tumour was removed in August, 1893. After this she was much better and stronger for about eight months when her size began again to increase. For five weeks there had been difficulty in micturition, with pain during the act. Whilst lying in bed, however, micturition had been easy. Menstruation had occurred once since the operation, normal in colour, but scanty in quantity. Operation was performed on Oct 5th, the patient being in the Trendelenburg position. A median abdominal incision was made and a large quantity of ascitic fluid escaped. The right ovary was cystic, and its Fallopian tube was adherent, enlarged, contained muco-pus, and its fimbriated extremity was closed. The omentum was greatly thickened and presented hardened patches (? fat necrosis). It was adherent to a coil of small intestine. Another coil of small intestine was reddened and presented similar patches. Death occurred on Oct. 7th. The temperature rose steadily after operation from 97° to 101° F. The pulse was never above 96, but the respirations quickened from 18 to 36.

CASE 3.—Book 1, 26. Mrs. ——, aged 23 years, was admitted on Oct. 4th, 1894. She had one child four years old. There had been no miscarriages. Menstruation began at 11 years of age, the periods recurring every two to three weeks and lasting six or seven days. There was always pain before and during the period, chiefly felt in the hypogastrium. The confinement was tedious, the pains lasting for four days. She was in bed nearly a month afterwards and had never felt well since. She suckled the child for six months and weaned it then because she was in bed for two weeks with pelvic pain and vomiting. Since her confinement menstruation had occurred about once in six months with pain before, during, and for two days following, the flow. The period now lasted from six to seven days. The last one, which had just finished, had lasted 14 days. The pain now spread over the sacrum and around both ilia. It also passed down the outside of the right leg as far as the foot. On the left side it followed the course of the sciatic nerve as far as the knee. For the last three years there had been some uterine prolapse. A pessary was applied and worn until the last three months when it was removed in consequence of the pain it caused. She had suffered from hæmorrhoids ever since the confinement. There had been leucorrhœa before marriage. This had greatly increased ever since and had sometimes been offensive. Bimanual examination showed a large uterus, the fundus of which was on a level with the anterior superior iliac spine. The os was split on the right side. The right Fallopian tube was thickened and tender. The pain was equally complained of on both sides, but the left pelvis appeared to be clear. Operation (which had been postponed because of a slight attack of influenza) was performed on Nov. 13th, 1894. A median abdominal section was made. The right Fallopian tube was found to be thickened and adherent to the broad ligament and ovary, with which it formed one mass. The small intestine and omentum were also adherent to this. The tube and ovary were removed, the uterine end of the stump being covered over by peritoneum. The patient slowly recovered and went home in January, 1895.

CASE 4.—E. 175. Mrs. ——, aged 37 years, was admitted on July 18th, 1895. She had had no children; there had been no miscarriages. Except when 15 years old, when she had amenorrhœa for nine months, after her first menstrual period, the menses had always been regular up to the time of her marriage. Since that time the intermenstrual period had usually been three weeks. For the last three months there had been leucorrhœa for a day or two after the periods. For the last three weeks before examination she had noticed a discharge from the rectum, at first jelly-like, afterwards creamy, followed by throbbing sensations in the bowel after a stool. This lasted for about five minutes and then gradually became less. Urination was frequent and this was worse sometimes than at others. For the last month, dating from sitting upon damp grass for some time, there had been some pain, especially after coition. For the last two days there had been tenesmus. Per vaginam (bimanually) an enlarged, tender, and fixed mass could be felt in Douglas's pouch. Abdominal section was performed on July 20th. On opening the peritoneal cavity the omentum was found to be slightly adherent to the broad ligament. This was easily stripped off and the right Fallopian tube was found swollen, tense, and adherent to the posterior surface of the broad ligament. It was peeled off without rupture and removed. The right ovary, as well as the left tube and ovary which were apparently healthy, were left. The abdominal wall was closed. Prompt recovery followed. The tube on section contained pus; the curled-in fimbria were well seen from within.

CASE 5.—L. 36. Mrs. ——, aged 31 years, was admitted on June 22nd, 1896. She had had two children, the youngest being five years old. Two years before admission she had had an attack of "inflammation of the bowels." For three months she had complained of pain in the right iliac fossa; this was constant until the last month before admission, since that time it had been intermittent. This pain was relieved to some extent during the menstrual flow. The periods had been regular until the last six months, since which time there had been a profuse loss every 14 days. About one month previously there had been some vaginal discharge but none was present at the time of the examination. There was tenderness on pressure over the right inguinal and iliac region. Bimanually a rounded, tense mass could be felt on the right side of the uterus, the body of which was pushed to the left, the os and cervix being drawn to the right. There was marked pulsation in the right vaginal fornix. Operation was performed on June 26th, the patient being in the Trendelenburg position. On median abdominal section being made the right ovary was found greatly enlarged and cystic, one cyst containing offensive pus. The omentum and small intestine were adherent to it. This was separated and the tumour was peeled off the posterior surface of the right broad ligament. The right Fallopian tube was closed and also contained pus. This was also removed. A glass drainage-tube was placed in Douglas's pouch projecting from the lower end of the wound. From this fluid, at first bloody, becoming clear on the second day, was drawn off, at first hourly, then every three hours. On the fourth day flakes of pus appeared in it and began on the sixth day to smell fecally; this smell continued until the fifteenth day, the amount, however, decreasing. The tube was removed on the sixteenth day and the patient recovered, returning home on August 12th.

CASE 6.—L. 40. Mrs. ——, aged 27 years, was admitted on June 27th, 1896. Menstruation had commenced at the age of 16 years and had recurred every three weeks. She had never been strong and had had no miscarriages. She had one child seven years old. The confinement was normal, but after remaining in bed for eight weeks she got up, began to lose blood freely, and her vagina was tamponed by her medical attendant. She went to bed and remained there for eight weeks longer. She complained on admission of great pain in the hypogastrium, in the right groin, and over the sacrum which had recurred after each period since her confinement. At intervals she had been free from pain until her last period three weeks previously, since which time it had been persistent. There had been constant vaginal semi-purulent discharge ever since the confinement. The periods had been regular but the loss each time had been profuse and clotted. The uterus was found to be fixed, the os being deeply split. The left fornix was filled by a large fluctuant elastic mass, whilst on the right side there was a smaller and firmer mass. On July 10th a median abdominal incision was made, the patient being in the Trendelenburg position. The left tube and ovary were blended into a large abscess cavity firmly adherent to the broad ligament. Many and firm adhesions were found on the right side, but the ovary and tube appeared to be healthy. Adhesions were separated or tied and divided. The right tube and ovary were peeled off the broad ligament and removed. The pelvic cavity was washed out with saline solution, dried by sponges, and the abdominal wall was closed without drainage. The menstrual period appeared on the 11th and lasted until the 16th, being followed by a brownish offensive discharge. The smell disappeared on the 18th and the discharge ceased on the 20th. The patient was discharged on August 1st. She returned four years later with marked retroflexion and a tender and swollen right tube. Ventrofixation was done and she was discharged well on Dec. 22nd, 1900, three weeks later.

CASE 7.—Y, 30. Mrs. ——, aged 36 years, was admitted on August 28th, 1896. She had had three children and one miscarriage. When 16 years old she lost blood continuously for six months. She married when 18 years old and was first pregnant six and a half years after marriage. Her first child was born 12½ years previously, the labour being normal, with a good convalescence. A miscarriage occurred at five weeks 11½ years previously. The patient had "inflammation" for 13 weeks following; she got up for two days and had to go to bed again for 16 weeks. Her second child was born ten years ago, prematurе, at eight months. When six months pregnant she flooded and the vagina was tamponed. She nearly bled to death at the confinement. The child was born at 6 A.M. and the placenta came away itself at 9 P.M. Her third child was born eight years ago at full time. For the first three months of pregnancy the menses appeared regularly. The membranes ruptured three days before the birth of the child. She was in bed for a month afterwards with "winty spasms." Since this confinement there had been occasional dribbling of blood for five or six weeks at a time; this had been most marked during the last 12 months. The patient complained greatly of flatulence. There was no frequency of micturition. 14 days before admission she had a rigor; this had recurred several times since. Bimanual examination showed an apparently normal uterus, with a firm elastic mass on the left side, springing from the uterine fundus. On Oct. 2nd a median incision was made below the umbilicus, the patient being in the Trendelenburg position. On the left side of the uterus a very tense, adherent tumour of the size of a small orange was found. This was formed by the ovary which was converted into a pus sac, with very thin walls, which ruptured during separation. The pus was caught by sponges which had been packed in below. The left tube was closed at both ends and was distended by clear amber-coloured fluid. Both were removed and the abdomen was closed without drainage. Convalescence was delayed by uterine hæmorrhage which set in on the fifth day and lasted for six days, when the uterus was dilated and curetted, some soft placenta-like membrane being brought away. From this time improvement was rapid and continuous.

CASE 8.—L, 32. Mrs. ——, aged 33 years, was admitted on Nov. 14th, 1896. There had been one confinement seven weeks previously to admission. Rigors supervened on the third day. Pain then was felt in the right inguinal region. On admission bronchitic rales were heard all over the chest. Bimanually the uterus was found to be fixed, with two large, rounded, elastic, fixed masses, one on either side. Operation was postponed in order, if possible, to eliminate the bronchitis before this was done, but as the temperature rose steadily from 100° F. on admission to 103° with morning remission it was thought best not to delay further. Operation was performed on Nov. 24th, the patient being in the Trendelenburg position. A median abdominal section was made. The omentum was thickened and widely adherent. The appendix was adherent to the left ovary which was deeply embedded in firm adhesions. About an inch of small intestine was also adherent and was separated with some little difficulty. After loosening all these the left ovary was found to contain two abscess cavities, one in the centre and one near the surface. This was removed with the left tube which seemed merely inflamed and was not much changed. The appendical mesentery was matted up in such a way that two tubes appeared to spring from the cæcum. The appendix was removed and the stump was covered by peritoneum. The right tube was very adherent, buried in adhesions, and greatly swollen. After it was sufficiently loosened so that it could be brought up towards the surface sponges were packed around it and it was opened. About an ounce of pus was evacuated and then the empty tube could be further loosened, tied, and removed. There was free bleeding from the separated adhesions for a time but this soon ceased. A glass Keith's tube was placed in Douglas's pouch and the abdominal wall was closed around it. The temperature sank to normal during the night and remained so until the morning of the 28th, when it rose again to 101°, reaching 103·6° at 10 P.M. On the 27th it sank to 100° and continued below this until just before death, when after sinking to 97·4° it rose again to 102° on Dec. 5th, when death ensued. The pulse gradually and steadily increased in rapidity from 128 after the operation to 170 before death. The respirations ranged from 24 to 60. There was persistent and very distressing coughing from the time of the operation. Pus was found in the fluid withdrawn from the tube on the 28th and fæcal matter the same night. This became more and more in quantity up to the time of death. The bowels, however, moved freely from Nov. 26th, flatus having passed first on the 25th. Urination was free but pus was seen in the urine on the 26th.

CASE 9.—W, 104. Mrs. ——, aged 38 years, was admitted on Oct. 21st, 1897. She had had three children but no miscarriages. The eldest child was aged 15 years. The perinæum was torn. The youngest child was aged 10 years. The last confinement was very painful. Every pregnancy had been associated with severe vomiting, sometimes of blood. The last child was suckled for 15 months. For six months the patient suffered from great pain in the hypogastrium and on the left side, especially on exertion. Since that time the pain had been less, though always present to some extent until five months before, when it again became more intense. She had never been wholly free from pain except at night, when she slept from 10 P.M. to 3 A.M., after which the pain prevented further sleep. In 1893 she consulted a surgeon who found retroversion and prolapse. The version could not be remedied even with a sound under chloroform. Pessaries and tampons were used. Relief was obtained by Thomas's glycerine pessary, which prevented the otherwise constant bearing-down, but produced frequent desire to urinate. Urination was painful on commencement; it would stop suddenly and then go on again. After urination there was pain for about an hour. Menstruation was regular, but the pain was always worse at the period, and this accentuation had been more marked since the pessary had been worn. She suffered also from piles, which bled a good deal.

CASE 10.—N, 103. Miss ——, aged 47 years, was admitted on Nov. 25th, 1897. She had always been regular, with some premenstrual pain. She had complained for some months of pain in the hypogastrium; this was dull and continuous, and from time to time there was acute pain on the left side, which passed down the thigh, mainly in front, along the course of the inner and middle cutaneous nerves. There was undue frequency in micturition and the pain was sometimes relieved and sometimes increased by the act. It was difficult to get any clear account of her symptoms but the acute pain was associated with vomiting. There had been habitual constipation. Recto-bimanual examination showed a virgin uterus, with an elongated elastic mass by the side in the position of the left Fallopian tube. This was extremely tender. The hymen was intact and the vagina was narrow. On Dec. 2nd operation was performed and commenced from the vagina. The bladder was separated and the uterine arteries were tied. The patient being turned into the Trendelenburg position a median incision was made. The small intestine was adherent to the anterior peritoneal wall. The tubes and ovaries were matted together and covered by adherent omentum. As it was evidently futile to attempt separation by this route and there existed a large collection of fluid in the left tube the patient was replaced in the lithotomy position and with great difficulty, owing to the narrowness of the vaginal canal, the uterus was removed. When the peritoneum was opened about a pint of viscid orange-yellow fluid escaped from a cavity with smooth walls on the left side. This cavity and the vagina were filled with iodoform gauze. Recovery ensued and the patient was in good health in April, 1904.

CASE 11.—Book 1, 83. Mrs. ——, aged 29 years, was admitted on Jan. 17th, 1898. She had had no children and no miscarriages. She had never enjoyed good health and had had "slow fever" at 12 years of age which left her ailing until 20 years old. After this she suffered from anæmia. Later she had fair health until six months after her marriage, three years before; then she had "swelling of the ovary." In October, 1895, she contracted scarlet fever and was in a sanatorium for seven weeks. In September, 1896, she was chilled whilst at the seaside; a menstrual period occurred soon after and the flow was scanty and clotted; there was not much pain at that time but being constipated she took some senna which produced diarrhœa and this brought on pelvic pain. This pain was most intense during the first three months afterwards; it was now not so continuous but when it did come on it was quite as severe as at first. About a month after the pain began she commenced to lose weight; this improved a little on going to the seaside again in February, 1897, but fell off again. She had been confined to bed for the last ten months and for nine months had had night sweats. The left leg had been swollen, with some difficulty in full extension. The right was normal in size and movement. At the time of examination the patient was much emaciated with a hectic colour on the cheeks. The edge of the liver projected one and a half inches below the costal margin, was smooth, and without bosses. The spleen was not enlarged. Bimanually the uterus was found to be fixed with a firm, rounded, elastic mass on either side of it. Operation was performed on Jan. 20th, 1898, the patient being in the lithotomy position. The vagina was very narrow. The bladder was separated off in front and the posterior fornix was opened. This latter incision bled rather freely and opened up a cavity containing about two ounces of foul pus which was mopped out. The uterus was split completely but it was impossible to draw either side down. The vagina was plugged with gauze. On opening the abdomen, after the patient had been placed in the Trendelenburg position, a few clots were found over the line of division in the vesico-uterine fossa. A loop of small intestine was found adherent to the bladder and to the left iliac fossa and the adhesions, which completely shut in the uterus and tubes, were so firm as to require division by the scissors, leaving a longitudinal raw surface on the bowel. An attempt was then made to draw upwards the uncovered uterus, but neither half would move. A large pus sac was seen on the left side. This was enucleated but was torn slightly in the process, fluid escaping on to a flat sponge placed behind. When this was done the corresponding left half of the uterus could be brought up and removed. The right uterine segment also became moveable and was taken away with fair ease. The right ovary was then shelled out of the bed of adhesions in which it lay and was found to be cæseous. The whole pelvic cavity was then dried out and a large gauze drain was drawn through into the vagina, its upper part being packed into the pelvis in order to cover the raw surfaces which were unavoidably left. All vessels as divided were tied with fine silk and cut short. The pelvic peritoneum was left open, the gauze projecting through it; the abdominal wall was closed. There was very great shock. Transfusion and hypodermic injection of suprarenalin were given during the operation, and the latter steps of the operation were greatly hurried. There was no radial pulse on completion, and transfusion was again carried out on her return to bed, whilst suprarenal extract was again given hypodermically. She recovered gradually and the course of events seemed favourable, but 24 hours later she suddenly collapsed again and in spite of fresh transfusion she died.

CASE 12.—Book 1, 73. Mrs. ——, aged 31 years, was admitted on May 5th, 1898. She had had no children or miscarriages. Menstruation had commenced at 14 years of age. She was suffering from typhoid fever at the time. She had never been irregular. The period occurred every three to four weeks and was always painful, but latterly this pain had become more frequent and more intense. The pain was felt in the hypogastrium and over the sacrum and often passed down the front of the left thigh, never the right. She had suffered from leucorrhœa, but never more severely at any one time than another, and there had never been smarting on urination. Bimanually the uterus was found of normal size, but fixed between two elastic masses, one on each side of the pelvis, the one on the left being much the largest. Her husband strongly objected to the removal of more than one ovary and tube if it could possibly be avoided. Operation was performed on May 6th, the patient being in the Trendelenburg position. A median abdominal incision was made. The omentum was lightly adherent to the uterus and left Fallopian tube and separation was easily carried out without any necessity for ligature. The left tube was coiled inwards and downwards around the ovary, which was converted into a pus sac. The tube itself was greatly swollen, reddened, and occluded. The whole mass was adherent in Douglas's pouch and one portion yielded during separation, giving exit to a thin brownish fluid which was caught upon sponges which had been packed in behind. After removal the opposite tube was inspected. It was swollen and occluded. The ovary, however, appeared to be healthy and, respecting the husband's wishes, they were both left. Recovery was rapid and uneventful and up to the present, six years after, no further trouble had been experienced from the very doubtful tube which was left behind.

CASE 13.—W, 84. Mrs. ——, aged 31 years, was admitted on May 6th, 1898. She had had no children. She had had menorrhagia for three periods followed by offensive purulent vaginal discharge. There were pain all over the abdomen and tenderness on pressure over the left ovary, together with some gradual abdominal enlargement. Colotomy was performed with the patient in the Trendelenburg position. The omentum was adherent to the uterus and left tube. The left tube and

ovary were converted into a pus sac and were removed. The right tube was swollen but not distended; this was not removed. The wound was closed without drainage. Recovery ensued and the patient was in good health in April, 1904.

CASE 14.—I., 172. Mrs. ——, aged 33 years, was admitted on Oct. 23rd, 1898. She had been married 11 years; she had had no children or miscarriages. The menses, which had commenced at 13 years of age, had been always regular. The flow had always been free, lasting for from five to six days. Before marriage black clots were often seen. Since marriage these as well as "lumps of flesh" were noticed. Before marriage there was sacral pain, not so much since. With the period there had always been pain at first, which was relieved by the flow. For the last eight years the pain had been more severe in front in the hypogastrium, at first mainly on the right side, but during the last few months this had changed more to the left side. For the last few months the amount lost had been rather less until the last period which commenced on Oct. 18th; this had been much more copious than usual. There had been three occasions on which the loss amounted to actual flooding; the first seven years ago, which lasted three weeks; the second four years ago, lasting a week; the third at Christmas, 1898, which lasted only a few days, but she lost "over a quart of blood at one gush." From that time she had not been well. Bimanual examination showed a large, hard, immoveable uterus, with swellings extending outwards on both sides apparently into the broad ligaments. The diagnosis made was that of uterine myoma with possibly pyosalpinx or broad ligament out-growths of the myoma. Operation was performed on Oct. 27th. The bladder was separated and both uterine arteries were tied from below. The patient was then placed in the Trendelenburg position and the abdomen was opened in the median line. The uterus was found to be fixed very firmly, with a large pyosalpinx on the left side. On the right, the Fallopian tube was also distended, closed at the abdominal opening, and adherent to small intestine. The uterus was first removed in order to gain room. The left ovary and tube were then enucleated from very firm adhesions. On the right side the tube was pulled off the intestine and removed. When all was cleared out a large raw, rather ragged surface was left. As the patient showed signs of collapse a gauze drain was drawn down into the vagina, some being allowed to protrude into Douglas's pouch. No attempt was made to close the pelvic peritoneum. The abdominal wall was then entirely closed. A hypodermic injection of strychnine was required during the operation. There was very marked shock. Convalescence was slow but ultimately the patient recovered completely.

CASE 15.—S., 109. Mrs. ——, aged 43 years, was admitted on April 3rd, 1899. She had been married 22 years. The only child was born 21 years ago. She had never had a miscarriage. The menses had commenced at 18 years of age and were regular up to the birth of her child, throughout lactation, and since. The child lived for six years and died from phthisis. The labour was a lingering one but otherwise it was normal. She dated her ill-health from this confinement. She had been losing flesh for over three years. Two years before she began to feel worse and noticed a painful lump in the right iliac fossa. From this time there had been constant heaving and regurgitation of blood. Vagino-bimanual examination detected a rounded mass of the size of an orange in the right inguino-iliac region, which under chloroform could be felt to be connected with the right uterine cornu, whilst the fingers could be made to meet just above Poupart's ligament and below the tumour. The left broad ligament was free and the uterus was normal in size, shape, and position. On April 11th, the patient being in the Trendelenburg position, the abdomen was opened in the median line. The omentum was found firmly adherent to the brim of the pelvis and to the right Fallopian tube, which formed a large convoluted mass, with a surface which greatly resembled inflamed small intestine, situated above and to the right of the uterus, attached to the pelvic brim and the peritoneum over the psoas muscle. It did not descend into Douglas's pouch; to it some small intestine was also adherent. On attempting to peel off the omentum pus suddenly escaped as though some opening in the tube had been plugged by it. Most, but probably not all, of this was caught by sponges; the tube was enucleated as rapidly as possible, the abdomen was washed out by saline solution, which was dried out by sponges, and the abdomen was closed without drainage. She recovered without incident except for some ether bronchitis and was discharged well on May 19th. In August of the same year she returned complaining again of pain in the right inguinal and iliac region. The uterus was found to be very large, tender, and somewhat fixed. There was a large bossed mass behind apparently continuous with the uterus and firm. She told us now for the first time that a polypus had been removed from the uterus per vaginam two years previously. A diagnosis of fibromyoma and chronic metritis was made and vaginal hysterectomy was advised. She re-entered the hospital on Sept. 19th and vaginal hysterectomy by Landau's method was performed on the 29th. There was great difficulty on entering Douglas's pouch, owing to posterior adhesions. The uterus was therefore separated in front and split mesially. When the anterior surface was free the posterior could be peeled out of these adhesions as it descended. An encapsuled fibroid of the size of an orange was found in the right posterior wall and split with it. When both halves of the uterus were brought outside a large elastic mass was found fixed by adhesions in the region of the left ovary. This was now peeled out from in front and below upwards and backwards and proved to be the left ovary and tube, the latter greatly dilated in its outer third and filled with pus, the inner two-thirds being of normal size. The pelvic peritoneum was united and gauze was packed in below between the divided broad ligaments. Some sloughing of parts of this surface followed, but was easily kept in check by douching and the insufflation of glutol and the patient recovered and was sent to the convalescent home on Nov. 3rd, 1899.

CASE 16.—Mrs. ——, aged 28 years, was admitted on Jan. 24th, 1900. She had been married seven years. She had had no children or miscarriages. She had had no pain or illness after marriage. Her husband was said to be in good health. Menstruation was usually perfectly regular. She had occasionally been five weeks between the periods. She had never had any other discharge. Her present illness began 14 days before admission with sudden pain in the right iliac fossa, accompanied by vomiting. The pain was located by her in the inguinal region below McBurney's point. There was no diarrhœa or marked constipation. Her previous health, she said, was always good. On examination the patient was found to be a stout woman with a healthy colour. She lay on her back with both knees drawn up. The abdomen was irregularly distended by a firm rounded mass which extended from the right inguinal region to beyond the umbilicus and across the median line. This was dull on percussion from Poupart's ligament upwards. It was very tender on pressure. Per vaginam its lower surface could be felt high up but it did not bulge in this direction. The patient was placed in the Trendelenburg position and a long median incision was made from the pubes to a point two inches above the umbilicus. The omentum was found firmly adherent to a tense fluctuant tumour in the left half of the pelvis. After tying and dividing the omentum an attempt was made to separate the mass from the left broad ligament and to bring it out of the wound. Whilst this was being done thin ichorous pus spurted out in quantity from a point low down and outside. This proved to be the outer end of the greatly dilated tube, which had been plugged by thickened omentum. The sac was allowed to empty itself on to sponges which were packed beneath and then the tube was divided close to the uterus and separation was begun and carried from within outwards. The diameter of the tube was much increased but the main mass was formed by the ovary which had become a large pus sac. On the right side and below this having been covered in by the other was another fluctuating mass, the right tube, and a cystic ovary; this also was embedded in firm adhesions which took some time to separate. After their removal several long membranous adhesions attached to the bowel, uterus, and other organs were tied and removed. The abdominal cavity was dried out and closed; a small drain tube was left in the subcutaneous fat, as it was feared that some of the pus from the first mass might have soiled the wound surfaces; this was removed on the third day. It was doubtful whether all pus had been prevented from touching the peritoneal walls. A large amount of soiled omentum was removed. Some bronchitis supervened on the second day which was probably due to ether. On Feb. 4th some suppuration occurred in the wound and she became somewhat melancholic. On March 6th a localised pus formation was discovered in the right hypochondrium. A subphrenic abscess was opened, washed out, and drained, after which she gradually improved, though some suture abscesses still further delayed her convalescence.

CASE 17.—Mrs. ——, aged 30 years, was admitted on Jan. 1st, 1902. She had had one child three months before and was attended by a midwife who introduced her hand into the vagina. One miscarriage had occurred two years ago, followed by blood poisoning, for which she was treated in another hospital for four months. 14 days before admission she was attacked by rigors, and on the next day by pain over the lower part of the abdomen which had increased steadily up to the time of admission. Per vaginam a large mass, which was tender and elastic, was found in Douglas's pouch, pushing the uterus forward beneath the pubes. The uterus was normal in size. On Jan. 2nd posterior colpotomy was performed. A large cavity was opened from which thin, slightly offensive pus escaped. After evacuation this was packed with iodoform gauze. The temperature, which before operation was 101° F., promptly fell to 98° and did not again rise above normal. The gauze was removed in 48 hours and irrigation was used daily. She went to the convalescent home on Jan. 31st.

CASE 18.—Mrs. ——, aged 44 years, was admitted on Sept. 9th, 1902. She had been in perfect health until her marriage. Soon after marriage she complained of vaginal discharge with smarting on urination. Since her marriage she had never been well and for the last week she had had rigors with intense pain in the pelvis. The os was found high up and anteriorly. The fundus appeared to be retroflexed and firmly adherent. On the left side and projecting into Douglas's pouch was a large, tender, and elastic mass. The abdomen was distended, tender, somewhat rigid below, and tympanitic. Extremely foul pus was passed with the urine. On Sept. 12th an attempt was made to reach the mass from below through the vagina but failed. The patient was then placed in the Trendelenburg position and the abdomen was opened from above. The bladder was found to be drawn high up so that the median incision had to be extended upwards in order to get above it. The small intestine was found adherent all over the pelvic floor. The abdominal wound was closed. The patient was again placed in the lithotomy position and the uterus was removed by Landau's method. It contained two small fibroids. On opening the peritoneum several ounces of foul pus escaped, the main amount on opening the utero-vesical space. After irrigation three rubber drain-tubes were placed and packed around with gauze. The patient was greatly collapsed and died the next day. At the post-mortem examination foul pus was found in the pelvis. Pus was also found between the duodenum and the common bile-duct, between the superior surface of the liver and the diaphragm, and in a pocket formed by adhesions in the right iliac fossa.

CASE 19.—Mrs. ——, aged 32 years, was admitted on Feb. 12th, 1903. She had had three children, the youngest being six years old. She had had no miscarriages; her confinements had been normal with no instrumental aid. The pain had been felt occasionally before menstruation for some months, but there was no decided pain until Feb. 7th. She remained at her work until the 10th, when she was forced to rest. The pain was paroxysmal and was felt generally all over the lower half of the abdomen. There had been some burning sensation on urination for several weeks before admission to hospital, but no vaginal discharge. Menstruation was regular but very scanty up to the time of admission. It recurred twice every month, between this and operation two months later. Bimanual examination showed the retroflexed fundus to be adherent in Douglas's pouch; there was also a large elastic mass in the situation of the left broad ligament. Two months were spent in using glycerine tampons and hot douches in order to relieve pain and to tide over the acute stage. Operation was performed on April 11th. The patient being placed in the Trendelenburg position a median abdominal section was made. The omentum was found strongly adherent to the left Fallopian tube, which was swollen, closed, and convoluted. Its fimbriated extremity was adherent to some of the appendices epiploicæ attached to the sigmoid. The whole mass was so firmly fixed in the pelvis that enucleation had to be begun by division at the uterine end of the tube followed by dissection outwards. When this was removed the right tube was found equally inflamed and convoluted but not so swollen. The right ovary was becoming cystic; both were removed. Many and tough adhesions existed in Douglas's pouch between the uterine fundus, the tubes, and the posterior pelvic peritoneum. The abdominal wall was closed without drainage by tied suture. Recovery was uninterrupted.

CASE 20.—Mrs. ——, aged 32 years, was admitted on March 31st, 1903. On admission she was very ill and but little history could be obtained except that she had been very feverish for over 14 days. She complained chiefly of great pain in the hypogastrium and over the sacrum, passing down both legs. There was also pain on urination. The temperature on admission was 101° F., reaching 108° before operation. The pulse was 112 and the respirations were 44. Bimanual examination showed a large fixed uterus which was pushed over towards the left side. On the right was a firm, extremely tender mass attached to, but not continuous with, that viscus, in the position of the right Fallopian tube; this did not bulge towards the vagina and there were no pulsating vessels in either fornix. Operation was performed on April 2nd, the patient being in the Trendelenburg position. A medium incision was made. The patient had passed urine before coming into the theatre but the bladder was found still distended and consequently carried upwards into the line of division. A catheter was passed and more than a pint of urine was drawn off. After this the bladder sank to its normal position. The omentum was found adherent to the greatly swollen uterus and on separating one of the adhesions some pus escaped. The pus appeared to come from an abscess in the uterine wall. Both tubes were tensely swollen, reddened, and œdematous. On the right, the tube was separated from the pelvic brim, to which it was firmly adherent, and a swollen, multilocularly cystic ovary was brought up. On separating the tube the bladder, which was intimately adherent to it, was opened for about a quarter of an inch and some clear urine escaped; as sponges had been previously packed into Douglas's pouch however, probably no harm was done. The opening was at once closed. The uterus being evidently as thoroughly infected as the tubes, the whole was removed in the American manner, except that the cervix was also taken away, the vagina was opened, and the left tube and ovary were removed from below upwards. The ends of all ligatures were drawn down into the vagina on each side of a roll of gauze and the pelvic peritoneum was partially united over it. By this time, in spite of transfusion and hypodermic injections of strychnine, there were signs of great collapse. The abdominal wall was closed entirely by through-and-through sutures. Transfusion was repeated twice to the extent of two and a half pints each time subcutaneously during the next 24 hours. The strychnine injections were also repeated. A catheter was left permanently in the bladder. Transfusion was again repeated on the 3rd and 4th. There were extreme restlessness and persistent diarrhœa from the second day, flatus being passed during the first night after one dose—three grammes—of calomel. The temperature reached 104° on the third day. The pulse was 140 and the respirations were 30, the latter being of the Cheyne-Stokes type. On the fourth day she was evidently septicæmic; on the fifth day the temperature sank to 99·8°. The pulse was 120 and the respirations were 52. The diarrhœa still continued, however, and she died early on the sixth morning. At the post-mortem examination pus was found in the pelvis, the right side of which was sloughing. Both pleuræ and the pericardium contained several ounces of brownish serum. Both lungs were congested, bluish, and collapsed. The abdominal wall had yielded and at the upper part of the wound the small intestine was close below and adherent to the skin. The small intestine lay in transverse rows which were all adherent to the anterior wall, the lower coils to the pelvis. One coil was reddened and more firmly fixed to the pelvis on the right side. On separating the coils in the hypogastrium some turbid serum escaped from between them. The bladder was watertight and stood a full pressure of water from the main. The gauze vaginal drain had evidently not been efficient in clearing the pelvis.

CASE 21.—Mrs. ——, aged 32 years, was admitted on Sept. 1st, 1903. She had had no children or miscarriages and had been married nine years. The menses began at between 17 and 18 years of age and were always painless, but never very free. She was always regular whilst they lasted but since her marriage the amounts lost gradually diminished and for the last few years she had had amenorrhœa. Her health was perfect until her marriage and she remembered a sharp attack of pain and smarting on micturition soon after that event. Five weeks before admission she had a sudden attack of severe pain in the hypogastrium, accompanied by vomiting, which had continued more or less up to the time of her entrance into the hospital. At that time she complained chiefly of pain and swelling in the hypogastrium with some difficulty in urination. The abdomen contained an elastic defined swelling in the hypogastrium, which extended into both iliac fossæ and was very tender. The breasts were similar to those of a virgin. The cervix was carried high up. In front, between this and the bladder, was a soft elastic mass which bulged slightly into the vagina. No fluctuation could be felt in it and it was very tender to the touch. Operation was performed on Sept. 2nd, the patient being in the lithotomy position. Posterior colpotomy revealed a small apparently unaltered uterus with a large mass above and in front of it. An incision was then made in front of the cervix and over the projection noted. This was deepened for about one inch with no result, but a forceps pushed onwards in front of the uterus entered a cavity which on opening the blades of the instrument discharged several ounces of offensive grumous pus. The opening was widened, the cavity was washed out, and two drainage-tubes were introduced. These tubes were kept in position for nearly three weeks, as it was found that when they were removed the bladder acted as a valve, shutting the opening, and the cavity was refilled. Through these daily irrigation was done. At last they were practically pushed out by the contraction of the space. The temperature, which was 102·6° F. before operation, steadily decreased to normal and the patient went home on Oct. 3rd, no thickening of any kind being detectable on her leaving the hospital.

CASE 22.—Mrs. ——, aged 33 years, was admitted on Dec. 28th, 1903. She had had no children or miscarriages. Her sexual history had evidently been irregular. She, however, dated the commencement of her ill-health to the time after marriage. 15 years ago, however, she was in another hospital for bleeding with tenesmus and some vaginal discharge. In August, 1902, she said that she had "inflammation of the womb." She was a thin, worn-looking woman, evidently in great pain, complaining of purulent vaginal discharge and constant pain in the hypogastrium. The uterus was found to be fixed, enlarged, and with an elastic, rounded, fixed mass by its left side. Operation was performed on Dec. 31st, the patient being in the Trendelenburg position. A median abdominal incision was made. The omentum was firmly adherent to the small intestine, uterus, and to the uterine end of the left Fallopian tube. When this was separated a loop of small intestine was found adherent to the posterior wall of the uterus and the left Fallopian tube. In freeing this, which had to be done by the scissors at the expense of the tube, some cheesy pus escaped from the latter. The bladder was separated off in front and the uterus with both tubes and ovaries, which were all greatly swollen and contained pus, were removed. The left tube was greatly elongated and passed down behind the broad ligament to the bottom of Douglas's pouch, to which it was firmly fixed. The right tube was short but closed and swollen. Its inner lining was inflamed and coated with thin clot. The ovary on this side was slightly cystic, some of the cysts containing pus. In the right broad ligament was an ulcerated opening leading into a small cavity, from which some foul granulation material was scraped away. An opening was made from this cavity into the vagina and a gauze drain was drawn through into that canal. The ligatures were all drawn through into the vagina and between them a gauze drain, the upper end of which was left just flush with the peritoneal surface. On the posterior peritoneum were some remains of what looked like part of the wall of a pus cavity. This was snipped away with scissors. When all was done there was left a very ragged-looking Douglas's pouch. No attempt was made to close the pelvic peritoneum. The abdominal wall was closed. The operation lasted two and a half hours. Transfusion was required on the table. For about two hours there was a great amount of collapse, restlessness, and abdominal pain. The last two were relieved by the hypodermic injection of morphine. Transfusion of two pints was again performed five hours later, not because of shock, but with the idea of diluting and more quickly removing any toxin formed. Nutrient enemata with brandy were given every four hours. There was some hæmorrhage from the vagina during the first 12 hours. The vaginal plug was removed on the fourth day. The patient rallied well and recovered completely, returning home on Feb. 16th, six weeks after the operation.

CASE 23.—Mrs. ——, aged 32 years, was admitted on June 2nd, 1903. She had had four children, the youngest being five years old. Her husband had been dead four years. She had had no miscarriages. All the confinements were normal except the last but one, nine years ago, when she was attended by a midwife, who had some difficulty in the removal of the placenta. All the children were healthy. Since her husband's death she had gone out charing in all weathers. Menstruation had always been regular except during pregnancies and lactation. The periods recurred always three days less than a month. There was always some little pain about the second day, the periods always lasted three or four days, and the amount was always moderate. One period appeared between the time of admission and that of operation, and this was entirely painless. In September, 1902, she fell off a bicycle and "kenched" herself, feeling pain in the right iliac region, but in a day or two she felt well again. Five weeks before admission a dull aching pain was first felt over the umbilical region; there was never any sacral pain. She was poulticed for three days and kept in bed, with the result that this pain disappeared, but it was succeeded by a gnawing sharp pain in the right iliac region. Bimanually the uterus was found enlarged with an elastic tender mass on the right side and behind. There was no tenderness or enlargement detected on pressure over the appendix. Operation was performed on June 15th, the patient being in the Trendelenburg position. A median section was made. On opening the peritoneum the uterus was found to be enlarged, with a large right Fallopian tube, the fimbriæ of which were closed and adherent to the ovary which was transformed into a small multilocular cyst, both being fixed by adhesions to the back of the uterus and the broad ligament. On the left side the Fallopian tube was swollen and its fimbriated extremity was closed. The left ovary was a mere pus sac. Both tubes and ovaries were removed and the abdominal wall was closed. The convalescence was uninterrupted and the patient went home on July 3rd about three weeks after the operation.

Manchester.

THE RED LIGHT TREATMENT OF SMALL-POX.

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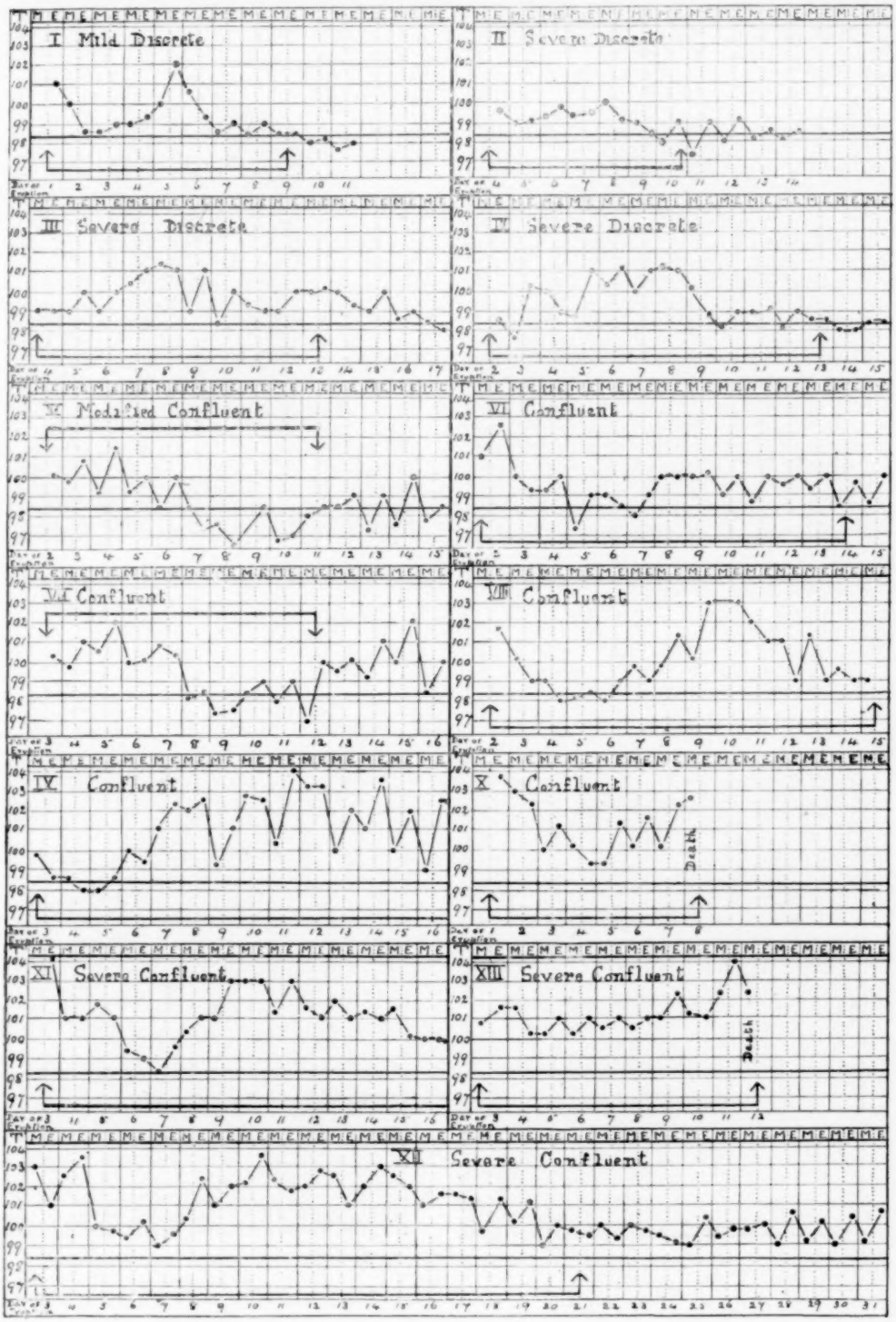
IN THE LANCET of July 30th, p. 287, an article was communicated by us on the red light treatment of small-pox. The article appeared without the temperature charts and photographs which were intended to illustrate it, but these charts and reproductions are now published separately as they furnish forcible evidence in favour of our contentions. The 13 temperature charts illustrate the 13 cases treated by us in red light and the numbers correspond with those in the tabular list of cases contained in the article, to which we refer the reader. The charts illustrate the point that treatment by red light did not prevent the fever of suppuration which was absent in only one case of modified small-pox (Case 5). It is to be remembered that as treatment in red light is claimed to prevent the fever of suppuration only no account is to be taken of pyrexia occurring before the fifth day of efflorescence. The duration of the treatment in red light is indicated on the charts by vertical arrows connected by a horizontal line. Of the four photographs reproduced,



Temperature charts of 13 small-pox cases treated by red light.

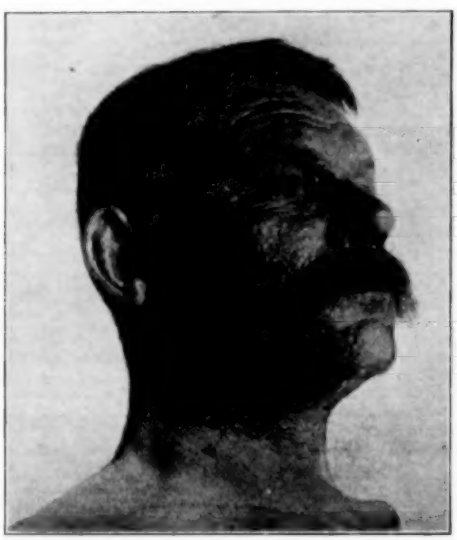
FIG. 1.

Case 8. Confluent small-pox. Vaccinated at time of invasion only. Convalescent after red light. Shows bad scarring.

FIG. 2.

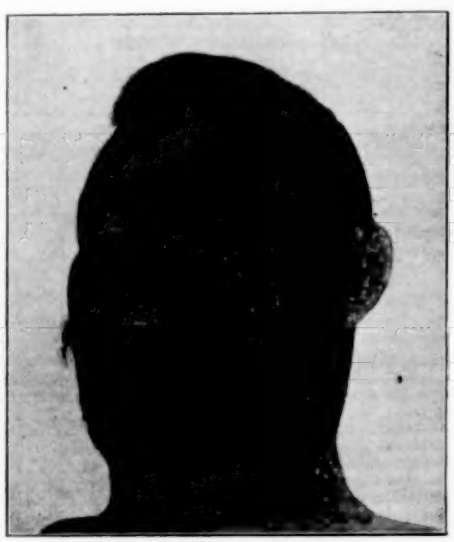
Case 11. Severe confluent small-pox. Vaccination doubtful. Convalescent after red light. Severe scarring and alopecia.

FIG. 3.



Case 12. Severe confluent small-pox. Vaccinated. Photographed before red light.

FIG. 4.



Case 12. Photographed during red light treatment in late stage of suppuration.

two (Cases 8 and 11) were taken during convalescence from patients who (contrary to the claims made for the treatment) were badly scarred. In one of these cases (Case 11) there was also considerable alopecia. Some other of the patients treated were scarred but it was not thought necessary to produce photographic records in further illustration of the point. It was curious in regard to Case 8 that the child was admitted with her sister and that both had been vaccinated and developed small-pox on the same days. The two children had attacks apparently of comparable severity. Yet the child who was not treated in the red ward had a modified eruption and recovered without scars, while her less fortunate sister, as may be seen by the illustration, was badly marked. Two photographs of Case 12 are reproduced. The first of these was taken before the patient entered the red ward and indicates the very early stage which the eruption had then attained. The second was taken late in the pustular stage, on the ninth day of efflorescence, the patient being temporarily removed from the red ward for the purpose. The two photographs therefore illustrate the fact that although the treatment was begun early it wholly failed (as in other cases) to prevent or to check the normal development of the lesions.

INSPECTION OF THE ANTRUM OF HIGHMORE.

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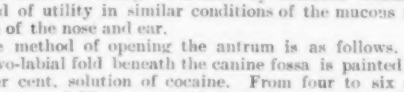
THE methods of diagnosing disease of the antrum at present in vogue give information only as to the fluid contents of the cavity but none as to the condition of the lining membrane if we except transillumination which occasionally indicates this to be more or less thickened. The diagnosis is therefore based solely on the discharge and our management of antral suppuration may be compared to the treatment of otorrhœa without examination of the ear. In dealing with the antrum questions frequently arise which make the inspection of its lining membrane desirable. Thus there may be doubt as to whether pus is forming in the antrum or merely collecting there, whether the suppuration is limited to a small area or involves the whole lining membrane, and whether the changes in the lining membrane are slight and will probably yield to mild measures, or considerable and demand a radical operation. Further, how else than by inspection are we to gain a true knowledge of antral affections? Is it not something of a reproach that although cysts and polypi are present not infrequently, as proved by post-mortem examinations, we have no signs or symptoms by which to diagnose them during life? Lastly, are our remedial measures to remain as limited as heretofore? If we fail to check a discharge by simple means—e.g., syringing, or insufflating powders—is our sole alternative method to be the radical operation entailing general anæsthesia and confinement indoors for at least a week? Considerations such as these led me to seek an easy mode of gaining access to the antrum, and having devised this to attempt the treatment of the diseased lining membrane by methods which had proved of utility in similar conditions of the mucous membrane of the nose and ear.

The method of opening the antrum is as follows. The gingivo-labial fold beneath the canine fossa is painted with 20 per cent. solution of cocaine. From four to six cubic millimetres of 10 per cent. solution of cocaine are injected at two or three points in the anæsthetised area into the soft

FIG. 1.



tissues over the canine fossa. After three or four minutes have elapsed the zygomatic-alveolar ridge is noted and commencing just in front of it an incision is carried forward along the gingivo-labial fold for about from one and a half to two centimetres. The facial wall of the superior maxilla is now exposed by pushing aside the investing soft tissues with a raspatory. The sharp trocar (Fig. 1) is applied to the bony surface at a point about five millimetres in front of the zygomatic-alveolar ridge and about the same distance above the incision in the mucous membrane. Having bored a passage large enough to admit the end of the blunt-pointed trocar (Fig. 2) the latter is used to make the full-sized opening. By completing the operation with a blunt-pointed

FIG. 2.

instrument the danger of injuring the opposite wall is averted. The trocars should be directed backwards, upwards, and slightly inwards. The operation is simple, often painless, although occasionally somewhat so when boring through the bone, can be quickly accomplished, and has in my experience but one drawback—namely, the necessity for the submucous injection of cocaine. I have tried eucaine in 20 per cent. solution but sensation was not satisfactorily abolished.

The landmark referred to, the zygomatic-alveolar ridge, descends from the malar process to the alveolar border above the first molar. I have recommended that the incision should terminate posteriorly just in front of this ridge, for when carried further back a small arterial twig is cut; if this escapes the bleeding is unimportant and no special measures for its control are necessary. In exposing the canine fossa one is not likely to pass so high as the infra-orbital foramen, still it should be kept in mind. The advantages of using large trocars to make an opening into the antrum are that they secure a cleaner wound with greater ease, rapidity, and precision and with less discomfort to the patient than does the ordinary method of chiselling.

To obtain a good view of the antrum a speculum is necessary. A large-sized ear speculum or Zaufal's naso-pharyngeal speculum cut down serves the purpose. An instrument such as that depicted (Fig. 3) is, however, most satisfactory. It resembles a large, elongated aural speculum of circular calibre with bevelled end. The last provision facilitates its

FIG. 3.

FIG. 4.

introduction and when in use gives a more extensive field of view and allows of the freer manipulation of instruments in the cavity. An extra long speculum (Fig. 4) is useful at times—e.g., when œdema of the lining membrane more or less occludes the lumen the opposing surfaces may be pushed apart by the instrument and the deeper regions inspected. To introduce the speculum the left forefinger is used to raise the lip and so cause the wound to gape. The speculum is then passed in gently. If any difficulty is encountered it is best overcome by looking through the speculum, mopping away the blood if necessary, and then pushing aside the soft tissues with a probe or avoiding the bony ridge of the opening by altering the direction of the instrument.

On introducing the speculum the posterior part of the antrum directly meets the view. By inclining the instrument in various directions and turning the bevelled part towards the region to be examined the lining membrane of the greater part of the cavity may be minutely inspected. The parts of which a view is unobtainable are the anterior wall and those portions of the other walls immediately adjacent, especially the roof. The ostium maxillare is usually not seen owing to the inner wall being viewed in perspective, but its position is easily determined by a right-angled probe under control of the eye. If the artificial opening were bored further outwards—e.g., over the zygomatic-alveolar ridge—instead of in the canine fossa the ostium would be visible and a better view of the inner wall obtainable, but for general purposes the route already recommended is probably best, and it has the further advantages that here the bone is thinnest and the speculum is most easily introduced.

Immediately after the operation, having syringed the antrum if necessary, a look may be taken at its lining membrane. The detailed examination is best postponed, however, till the following day, the wound meantime being

loosely packed with iodoform gauze. On the first night there may be some pain but it is usually insignificant. Slight swelling of the cheek may be present after the operation or may develop more markedly on the following day or later, especially if the patient has been exposed to cold, and may last from a couple of days to a week. It is sometimes considerable, extending to the lower eyelid and causing marked disfigurement, but it is associated with comparatively little discomfort. At the patient's second visit the gauze is removed, the antrum is syringed, and the lining membrane is thoroughly examined by means of a strong, bright light reflected through the speculum.

Occasionally the patient complains of the speculum causing pain. This may be avoided in a large measure by painting the parts with cocaine and using a smaller speculum. The tenderness is usually referred to the lower bony edge of the opening on which the instrument presses. As long as it is desired to have access to the antrum the wound in the soft tissues must be kept open by means of packing. After this is discontinued it rapidly narrows and closes. Over 40 antra have been opened and inspected in the manner described. The various affections met with, the methods of treatment employed, and the results obtained are briefly recorded below.

Antra in which the lining membrane was normal or but slightly changed.—In several of these cases suppuration was apparently going on in the antrum, for pus was being regularly washed out by syringing through an opening made in the alveolus. On inspecting the cavity, however, the lining membrane seemed normal or but slightly thickened on the floor. In order to exclude the antrum as the seat of the suppuration it was packed with gauze and as the discharge of pus from the nose was undiminished clear evidence was thus afforded that the antrum was merely a reservoir for pus draining into it from the frontal sinus or ethmoidal cells. This method is therefore capable of yielding valuable information as to the source of pus issuing from the anterior part of the middle meatus. In one of the cases of this group the patient suffered from nasal polypi, the recurrence of which could not be controlled, and in another there was persistent and excessive swelling of the inferior turbinates without manifest cause. The antra in both of these cases were suspected on account of other signs and symptoms, but wrongly as inspection proved. In those cases in which the antrum was opened but the lining membrane found normal the wound was immediately allowed to close. A couple of stitches to keep the soft tissues together and prevent the entrance of food would perhaps have been advisable but none were used, the patient merely placing a small pad of gauze in the gingivo-labial fold over the wound while eating. In all of the cases healing took place without any untoward effect.

General thickening of the antral lining membrane.—The majority of the patients whose antra were inspected suffered from chronic antral suppuration and in most of these cases the appearances presented by the diseased lining membrane varied but little and consisted in a general thickening. The surface of the membrane was pale and smooth; ulceration was observed in no instance. The degree of thickening was not uniform; without exception it was greatest on the floor and least in the upper part of the cavity, a fact which emphasises the irritant action of pus lying in the antrum. In one case, in which the antrum had been previously syringed from the alveolus for several months, a nipple-shaped proliferation a quarter of an inch long projected from the floor, the passage for the cannula running through the centre of it. Besides being thickened the lining membrane was sometimes swollen so that adjacent walls, instead of passing into one another imperceptibly, met at an angle, and the point of the probe was lost sight of between the folds. A tooth was found lying loose in the cavity in two instances; one had been forced up in an attempt to extract it. In cases in which the suppuration might possibly have been of dental origin the floor of the antrum was carefully examined but without ever discovering the mouth of a sinus or other indication to support this view.

The antral suppuration in several of the cases presenting the above appearance was associated with nasal polypi or frontal sinus suppuration, or both, and in one instance with fœtid atrophic rhinitis. In these cases of chronic suppuration in the antrum attempts were made to check the discharge, either by modifying the diseased mucous membrane or by destroying it and encouraging the growth of a new lining membrane. Various medicaments were tried. Antiseptic powders were insufflated, boric acid, iodoform, iodol, airol, aristol, and europhen being in turn applied, but all without appreciable benefit. Packing the cavity with boric acid increased the discharge; with iodoform it was somewhat diminished. Liquid applications of an astringent or caustic nature—e.g., chloride of zinc, silver nitrate, or carbolic acid—were also repeatedly employed but proved inefficient. Of all medicaments tried chromic acid fused on the end of a probe was found to be the most useful. It had the additional advantage of being easily applied. Experience showed that it was inadvisable to cauterise more than half of the antral surface at a sitting. Where thickening was marked, as on the floor in many cases, the bead might be firmly rubbed over the lining membrane, but caution was necessary where the membrane was less thick, otherwise considerable pain might be suffered afterwards. In my later cases I found it best to cauterise lightly twice or thrice at intervals of a few days and to syringe out the cavity after each application with a solution of bicarbonate of soda. Usually on the second day following the cauterisation the surface of the mucous membrane that had been treated presented a dirty grey appearance and was found to consist of necrosed tissue which could be wiped or picked away more or less completely. Perfect healing required from two to three weeks and the membrane was then smooth, grey, and much thinner than before.

By means of chromic acid used in the manner described I was able to get the lining membrane into a healthier state and to diminish suppuration but unfortunately not to check it completely. The treatment was continued, as a rule, for not longer than three or four weeks and possibly if it had been persevered with cures might have been obtained. The difficulty, however, was to keep the opening free owing to the soft tissues constantly encroaching upon it. If this tendency to closure of the wound could be overcome without causing discomfort to the patient and easy access to the cavity maintained, excellent results might, I believe, be obtained. Curetting was also tried. This to be effective must secure the removal of the entire diseased lining membrane. I have found that it is not possible to operate thus without severe pain, even if only a small area which previously had been thoroughly painted with a 20 per cent. solution of cocaine is treated at a time. After a few trials, therefore, I abandoned the idea of curetting without a general anæsthetic.

Œdema and thickening of the antral lining membrane.—In a few cases œdema was the most striking change presented by the antral lining membrane. On introducing the speculum little or no lumen was found, the inner and outer walls of the cavity being swollen to such a degree as to meet. These swellings had a dull grey aspect and were yielding, elastic, and somewhat fluctuant, giving one the impression of a bag partly filled with fluid. On aspiration, however, no fluid was obtained and on incision there was no apparent leaking or shrinking. If the cavity were loosely packed with gauze the lumen on the following day was found to be greater and the œdema of the lining membrane was correspondingly less; and if the packing were repeated for several days the swelling gradually disappeared and less or more thickening alone remained. In the most marked cases of œdema of the antral lining membrane the discharge was usually of a muco-purulent nature and the prominent feature in the nasal fossæ was polypoid rhinitis, or polypi, sometimes of an obstinately recurrent character. After the œdema had subsided the lining membrane was treated with chromic acid in the manner already described. A decided opinion cannot be expressed as to the ultimate effect, but the impression gained was that the abnormal secretion from the antrum was diminished and that the nasal condition was improved.

Polypi and polypoid degeneration of the antral lining membrane.—Polypi were found in one case and polypoid degeneration in three cases. The case of polypi in the antrum was that of a young woman who suffered from abundant muco-purulent nasal discharge and a polypoid condition of the inferior and middle turbinates. On opening her left antrum a white, soft, cheesy material was encountered. After washing this out the greater part of the lining membrane was seen to be smooth, thin, and pink. A pedunculated multilobular polypus of about the size of a bean hung from the inner part of the roof and a similar growth but double its size sprang from the floor. In the right antrum polypi were found attached to the inner, outer, and anterior walls and to the floor. All these growths resembled nasal polypi in appearance. In the cases

of polypoid degeneration either flat, sessile bodies, having the grey gelatinous look of polypi, were situated individually on various parts of the antral lining membrane or were closely packed together. All three patients had antral suppuration, although the discharge of pus was not abundant, and two suffered in addition from recurrent nasal polypi. The pedunculated polypi were snared and the sessile ones were reduced by cauterisation with chromic acid. The antral affection was cured in one case and improved in the others; the nasal condition was also ameliorated.

Cysts of the antral lining membrane.—Cysts were found in the antrum in one case. The patient was a young woman who had muco-purulent rhinitis, probably of a strumous nature, with a tendency to recurrent polypoid proliferations of the middle turbinates. On examining her left antrum the cavity was found filled with very tough mucus, after the removal of which a large white cyst was seen close to the opening. On incising it scanty pus and a quantity of thick mucus escaped. Other cysts previously concealed were now disclosed. One was situated on the floor, a small flat one sprang from the inner wall, a moderate-sized one hung from the roof, and the sac of a collapsed one was present on the outer wall. The cysts were incised and chromic acid was applied to their lining membranes where accessible. Shortly afterwards there was marked improvement in the nasal condition, but as both fossæ participated it is doubtful whether this can be attributed to the treatment of one antrum, the other having not been opened.

Inspection of the antrum has revealed to me some highly interesting conditions, but as regards treatment I have no sensational results to chronicle. The ease and safety with which the method can be carried out justify its adoption as a diagnostic procedure. On the other hand, the results which I have obtained by the direct treatment of antral disease as described in this paper warrant only its reserved recommendation.

Glasgow.

THE VISUAL FIELDS IN TOBACCO AMBLYOPIA.[1]

BY N. BISHOP HARMAN, M.A., M.B. CANTAB., F.R.C.S. ENG.,

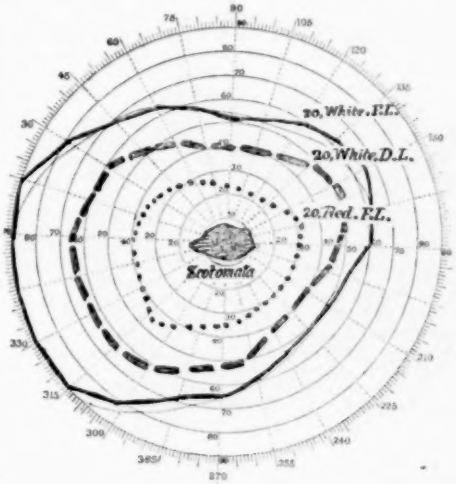
OPHTHALMIC SURGEON TO THE BELGRAVE HOSPITAL FOR CHILDREN; CHIEF CLINICAL ASSISTANT TO THE ROYAL LONDON OPHTHALMIC HOSPITAL; AND CLINICAL ASSISTANT TO THE OPHTHALMIC DEPARTMENT OF THE MIDDLESEX HOSPITAL.

WE are accustomed to summarise the subjective symptoms of tobacco amblyopia as involving a loss of visual acuity the result of a central scotoma, partial or complete; in the early stage simply a colour scotoma; later and in bad cases the scotoma may become absolute, indicated by a loss of perception for small white objects centrally. But—and this is a point often insisted upon—the outer limits of the visual fields are not contracted, they extend to their normal bounds. In short, there appears on the case paper, "tobacco amblyopia, central scotoma for colours, fields for white full." Then there is the cardinal symptom of Arlt's original description—nyctalopia.

The cases which I have investigated indicate that the commonly received view of the visual field is not correct—i.e., the vision is not affected centrally alone, it is found to be diminished peripherally when a sufficiently delicate test is used, and perhaps also over the whole field. At the same time the fields show a reasonable explanation for the frequently repeated assertion of patients that they see better in the dim light than in full daylight.

The perimeter room at the Royal London Ophthalmic Hospital is a small room lined with glazed-white brick on three sides; the fourth side is almost filled with windows; the large window space and the glazed bricks make the illumination of the room uniformly good. The windows can be covered by black blinds but the room is not absolutely darkened as light passes in between the white window frames and the edges of the blinds and is diffused by reflection from the walls into an uniformly dim light. With the room fully lighted I can read J.1 at a distance of about 1·2 millimetres from the central spot of the perimeter; when the blinds are drawn I can just read the same type when my chin is resting on the chin-plate of the perimeter. It follows that the light of the room has been reduced to about one-tenth of its normal brilliance by drawing down the blinds.

The method I have used in examining the visual condition of patients differs only from the usual procedures in that I have taken the fields for white objects twice, first in the room fully lighted and again when dimly lighted with the blinds drawn. The visual acuity of the eyes is noted, then the fields are taken for white and red with full illumination, and last the fields for white in the dim light. I am well aware how easily a little unconscious bias may make a great difference in taking such measurements as those of fields, I have therefore endeavoured to eliminate the personal equation by taking the measurements in as mechanical fashion as possible; thus by using a different pricker the fields for white in full and dim light can be taken on the same chart without the necessity of looking at the chart whilst the measurements are being taken, and in repeating the examination of cases on dates subsequently to their first examination the earlier charts are not referred to.



Left field of a male, aged 50 years. Vision failing from two to three months; has difficulty in distinguishing a sixpence from a half-sovereign. R.V. = $\frac{6}{9}$; L.V. = $\frac{6}{6}$. No error of refraction other than presbyopia. Smokes from half to three-quarters of an ounce of black navy-cut tobacco per diem. Drinks malt liquor sparingly; no spirits. This field fairly represents the conditions found in the other cases. Periphery: 20, white, F.L. = for 20 × 20 mm. white object in full light; 20, white, D.L. = for 20 × 20 mm. white object in dim light ($\frac{1}{10}$th illumination); 20, red, F.L. = for 20 × 20 mm. red object in full light. Scotomata: Solid black = scotoma for 5 × 5 mm. white object in dim light ($\frac{1}{10}$th illumination); horizontal shading = scotoma for 20 × 20 mm. red object full in light.

I have examined in this fashion all cases that have attended one of the cliniques at Moorfields during the past eight months to the number of 25, and by way of contrast there have been taken in the same manner the fields of some half-dozen apparently healthy subjects, smokers and non-smokers. In the healthy subjects the fields (examined with a 20 × 20 millimetre white object) were full both when the room was fully illuminated and when the blinds were drawn down—that is to say, the diminution of the light to one-tenth of its usual brilliance did not affect the perception of a 20 millimetre white object moving about the perimeter arc. In the subjects of tobacco amblyopia of moderate severity the examination of the field for a 20 millimetre white object with the usual full illumination shows that the outer limits of vision are normal, and by searching the region of the macula with small white objects (one or two millimetres) there is only occasionally any indication of defect. In making this central examination I found it advisable to correct any marked error of refraction. When, however, the light is diminished by drawing the window-blinds a re-examination of the fields shows a different result.

[1] Demonstrated in the museum of the Ophthalmological Section of the British Medical Association, Oxford, July, 1904.

On mapping the peripheral region with the same 20 millimetre white object the outer limit does not reach out to the normal by 10 to 30 degrees, the loss being slightly greater in the temporal region than in the nasal; also, in searching the central region there is elicited a loss of power to detect white objects of one, two, five, 10, and even 20 millimetre size over a smaller or larger area according to the seriousness of the case.

The fields of these patients for red objects, taken with full illumination, show loss of central and of peripheral perception of the colour in varying degree, and the comparison of the red fields and the "dimly lighted" white fields shows that when there is a loss of perception of red there is always some loss of perception for white objects in the dim light both centrally and peripherally. The losses in perception of red and dimly lighted white objects are therefore coincident.

In following out cases over some months the variations in visual conditions according to the faithfulness with which the patient followed out the treatment indicated—abstinence from tobacco and the administration of strychnine—has been most interestingly shown. Four cases have been followed to the point of recovery; good visual acuity has been regained, contracted fields of vision for dimly lighted white objects have expanded to a close coincidence with those taken in full light, and scotomata for colours and dimly lighted white objects have been recovered from. On the other hand, lapses in the abstinence from tobacco and alcohol—and particularly as in one case where a drunken debauch intervened—were followed by loss both in visual acuity and extent of field in a marked degree.

It may be asked, what becomes of the statement made so often by patients suffering from the disorder that they see better at night than in the full daylight? a statement which, Fuchs[2] writes, was proved by him to be true in a few cases. The fields which I have taken give the answer to the difficulty. That the patients do not see more clearly on a change from full daylight to a dimly lighted room is certain, for the fields which I have taken in the dim light were contracted and showed scotomata which did not appear when taken in the full light. But several of the cases showed the characteristic signs of *fatigue* in a tendency to that helical curve which is so marked in hysterical amblyopia. Not infrequently an examination had to be interrupted and the patient allowed to rest, which rest the patient took by covering the eyes with the hand, before it could be satisfactorily concluded. It seems therefore possible that in a dim light of some duration there may be some partial relief from the fatigue produced by the constant stimulation of a bright light, so that a slight improvement in the visual acuity of the patient may result, and this irrespective of the freedom from the dazzling effect of bright light in their partially blind state.

There remains to be considered the bearing of the features shown by these fields on the views held as to the nature of tobacco amblyopia. The commonly accepted belief is that there is an axial and retro-bulbar neuritis, a limited affection of the papillary macular bundle seated in that portion of the nerve found within the optic foramen. In the discussion on retro-bulbar neuritis at the Manchester meeting of the British Medical Association in 1902[3] I ventured to express my doubts on this point in favour of the probability of the disorder being primarily one of the retina. These fields show that the amblyopia is not confined to the central region but that given a delicate enough test a loss of vision can be demonstrated for the periphery of the field and from the liability to symptoms of fatigue exhibited by these patients the defect may be conjectured to extend in some degree to the whole field of vision. In short, these subjective symptoms point very strongly to the correctness of Arlt's idea when he originally described the disorder as a *retinitis*—"retinitis nictaloptica."

An inquiry very naturally arises from these observations: Is the altered perception of an object in a diminution of the general illumination paralleled by a loss in the perception of objects whose luminosity is diminished whilst the general illumination remains unchanged? As I have shown, the peripheral field for a 20 millimetre white object in a healthy subject is the same whether taken in full daylight or in the dim light (one-tenth illumination), and I find that in such subjects the white fields in the full light are practically the same whether the object be 20 × 20, 10 × 10, or 5 × 5 millimetres; the reduction of the area of the white from 400 square millimetres to less than a tenth of this area does not diminish the perception of the white object. In the subjects of tobacco amblyopia this is not so; successive examinations of the peripheral field with 20, 10, or 5 millimetre objects show a smaller range of perception for the smaller objects as against the larger, the field for the smallest object being very similar to that for the 20 millimetre white object in the dim light.

Queen Anne-street, W.

[2] Textbook, p. 443.

[3] Brit. Med. Jour., Nov. 1st, 1902, p. 1433.

CANCER FACTS AND CANCER FALLACIES:

A PLEA FOR THE MORE SCIENTIFIC STUDY AND TREATMENT OF MALIGNANT DISEASES.[1]

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UNDER this heading I would venture to call the attention of the section to the progressively increasing mortality from cancerous diseases in apparently all civilised communities; and secondly, to point out *more Socratico* one or two of the undeniable fallacies which seriously impede all present attempts at scientific investigation or practical amelioration. Of course, I can but touch the outermost fringe of this great subject.

In England and Wales the ratio of registered deaths from cancer to each million of persons living amounted in 1864 to 365; in 1874, to 461; in 1884, to 563; and in 1894, to 713. For the five years 1896–1900 it equalled 800·2 per 1,000,000. In 1901 "among males cancer was fatal at the crude rate of 691 per 1,000,000 at all ages and among females at the rate of 985 per 1,000,000."[2] In Ireland the cancer mortality in 1864 was 1498 in a population of 5,675,307. 20 years afterwards, with a decreased population of 4,962,693, is recorded an increased mortality of 1947. In 1902 the last published returns show 2861 deaths (females, 1575; males, 1286) to 4,432,274 inhabitants, or a ratio of 645 per 1,000,000. In Scotland the cancer deaths were 3503 (females, 2142; males, 1361) in June, 1900, out of a population numbering 4,436,958. This is at the rate of 800 per 1,000,000. In 1864, with 3,118,701 inhabitants, the cancer return was 1300; in 1884, with 4,962,693 people, it had increased to 2110. In New York State the 1,000,000 ratio was, in 1875, only 400; in 1885, 530; and in 1900, 670. In Connecticut it has risen from 520 in 1891 to 660 in 1900; in Massachusetts, from 610 to 710; in New Hampshire, from 560 to 710; and in Rhode Island, from 510 to 680.

Turning to European States, we find that in 1891 Austria recorded her ratio as 540; by 1900 it had increased to 700. In the same period Bavaria returns a rise from 890 to 990; Holland, from 790 to 930; Italy, from 430 to 520; Norway, from 610 to 920; and Prussia, from 450 to 610. Of the cities, Amsterdam returns for the same years, 1891–1900, a rise from 880 to 980; Boston, 690 to 810; Breslau, 860 to 1080; Brussels, 340 to 440; San Francisco, 600 to 1090; Stuttgart, 760 to 1270; Vienna, 1040 to 1210; and St. Petersburg, from 990 in 1891 to 1000 in 1899.[3]

Large as the above figures may seem there is considerable reason to believe that more accurate registration would augment them in no small measure.[4] Among ourselves a large number of deaths from cancer are certified as due to "gastritis," "enteritis," "intestinal obstruction," "stricture of pylorus," "dropsy," "internal tumour," and so forth.

Now the public—as voiced by the lay journals—credit us with complete ignorance of the causes of "cancer" and with utter impotence to eradicate it surgically or to ameliorate it medicinally. Is not the profession largely responsible for these absurdities? And could the influence of this great association be more beneficently utilised than in attempting to demolish them? What could be more fatally opposed to the interests of science than the common practice of grouping together a large number of diverse maladies under the single title "cancer"—no more definite and precise a term than "fever"! The point would be best appreciated by supposing someone to promulgate

[1] A paper read before the Surgical Section of the British Medical Association at Oxford on July 28th, 1904.

[2] Registrar-General's Report for 1901, p. lix.

[3] I am indebted for these American and continental statistics to the courtesy of Dr. E. F. Bashford.

[4] See Registrar-General's remarks at p. 73.

statistics or theories on the causation or prevalence of measles, enteric fever, and typhus fever under the last-named single heading. The absurdity of such a step would at once be manifest. Classification according to tissue origin reveals nine distinct *genera* of malignant new growth, with 13 well-marked *species*. Or if we include the blastomata, that small and rare class which springs from embryonic residua and thus complies with the well-known theory of Cohnheim, we have ten genera. Each of the above nine owns a different mode of causation; and of every one the exciting cause is accurately known and clearly defined in technical works.[5] By overlooking this primary essential of differentiation between lesions of utterly diverse origin and of widely differing clinical features the profession lends its countenance, materially in its own despite, to the numerous current journalistic fictions, to the frequent charges of ignorance and helplessness. Of what avail are arguments, researches, or statistical returns which bracket together such distinct varieties as an epithelioma of the tongue or lip and a carcinoma of the mamma? and which in addition commonly designate both as "carcinoma." The former is invariably brought on by continued mechanical friction; the latter follows a train of neurotic antecedents hindering or perverting the normal physiological changes of an actively functional organ to the stage of disuse and atrophy. The mode of causation in the first instance is patent and obvious; in the latter it can only be established by careful examination, by the collocation of sundry examples, and by carefully sifting historical details. The nuclei or nuclear fragments of an epithelioma are with rare exceptions arrested finally by the adjacent lymph glands, whereas those of a carcinoma, after a merely temporary detention by these organs, pass readily into the blood current and so are carried on to distant parts. This indicates a profound distinction between the qualities of the protoplasm in each of the two maladies, now more or less confounded.

Then there is what I would regard as a third phase or modification of the malignant cell. The nuclear fragments of the sarcoma corpuscle pass early into the blood and are grafted as metastases in distant viscera. But previously to the general blood contamination they do not grow within the lymph glands, though there can be no doubt that they are conveyed to these organs by the lymph current. The vague use of the word "sarcoma" for many species of malignant tumour beside that derived from the connective tissues—it denotes at different times primary cancer of the lymph glands, growths from embryonic vestiges, ditto from melanotic epithelial cells, even acutely-growing carcinoma—tends to hinder appreciation of this law. In this phenomenon—the destruction of malignant protoplasm by the lymph glands—and its proper investigation in the laboratory lies our best hope of practical improvement in the treatment of "cancer" by ultra-surgical means.

The idea that "cancer" in ordinary circumstances is an inherited malady was long since disproved by the exhaustive examination of numerous cases which amply demonstrated the utter absence of heredity from the history of the majority, whereas—and this is the most practical and most cogent consideration—a very definite exciting cause is invariably found to have been in operation in the case of the relatively small minority who record "cancer in the family."

A few years ago the late Mr. Alfred Haviland attributed to "towns situated on rivers which periodically overflow their banks" special proclivity to cancer. Inquiry showed that the local practitioners at those towns—Shrewsbury, for example—had no knowledge of any remarkable prevalence of malignant diseases in the neighbourhood; that any apparent excess in mortality depended on the existence of a large hospital or infirmary attracting people from the adjoining counties. Cancer shows no relation to any condition of *soil*, *climate*, or *food*, excepting alcohol. The chronic congestion of mucous membranes induced by immoderate use of the latter has a conspicuous share in the generation of epithelioma, the most prevalent form of malignancy in the male sex.

The discovery that mammary carcinoma secondarily infects the bone marrow in ordinary cases and that the cells lie dormant in that tissue for from two to six years before the disease again becomes manifest[6] has not only explained the mysterious course of that prevalent cancer variety but has also revealed with accuracy the conditions under which a radical cure is feasible by operation.

I would respectfully urge that this association should make an attempt to place our knowledge of malignant disease upon a truly scientific basis. I submit there might well be founded an association cancer committee the function of which should be to differentiate and to classify the numerous varieties known as "cancer." Secondly, to place on record authoritatively the facts we already know respecting their genesis and phenomena. Such a step would not conflict with the numerous schemes for cancer research. On the contrary, in my humble view it is an indispensable preliminary to their eventual success. All are at present very seriously hampered by the confusion which prevails, by the vague terminology, by the absence of any clear understanding as to what facts or laws are established and what yet remain to be elucidated. The example of a well-known transatlantic laboratory after several years' work—lately reported narrowly to have escaped the withdrawal of State aid because it had effected nothing—will accentuate this suggestion, which I venture to think would constitute a more practical measure towards the diminution of cancer mortality than any hitherto inaugurated.

TABLE OF DISEASES KNOWN AS "CANCER," WITH THEIR MODE OF CAUSATION.

I.—*Non-Congenital "Cancer."*

No.	Disease.	Tissue origin.	Cause.
1	Epithelioma.	Epithelium of mucous membranes; epidermis.	Continued mechanical friction aided by previous congestion.
2	Carcinoma.	Cells of acinar secreting glands, especially those of the mamma.	Any conditions hindering or preventing the natural devolution of the mammary gland after its period of functional activity has begun to wane. Several forms of new growth may thus arise, carcinoma being only one of these. Thus the almost invariable antecedent is trouble, anxiety, exhausting toil, prolonged illness, &c.; rarely mechanical violence in the form of a sudden blow.
3	Sarcoma.	The spindle-shaped cells of the connective tissue.	Always of traumatic origin, the injury being usually single and sudden.
4	Cylindroma.	Cells of tubular gland follicles in the alimentary canal.	Same as those of carcinoma; chiefly worry and trouble.
5	Lympho-carcinoma.	Cells of lymph glands. Also of the other lymphoid tissues, such as the marrow and tonsils.	Mechanical injury aided by previous congestive conditions. May follow a violent muscular strain. (See 24 cases, Cancers and the Cancer Process, p. 337.)
6	Rodent ulcer.	Cells of short hair follicles, chiefly those in the outer root sheath.	Same as of epithelioma.
7	Myo-sarcoma.	Nuclei of non-striated muscle. Hardly known except in connexion with the uterus.	Usually a sequel of long-standing uterine myoma. The "soft oedematous myoma" of Lawson Tait is the primary form.
8	Glioma (rare and obscure).	The neuroglia, nerve corpuscles (Virchow).	Most of the so-called "gliomata" appear to be due to embryonic vestiges. Others are true sarcomata consequent on traumatism.
9	Endothelioma (rare and obscure).	Endothelial cell plates.	Doubtful.

II.—*"Cancer" of Congenital Origin complying with the Theory of Cohnheim.*

10	Blastoma (exceptional).	Embryonic residua. Elements usually multiple and complex. (See Cancers and the Cancer Process, Appendix A.)	Apparently of spontaneous development and so markedly differing from ordinary "cancer."

Varieties or species of the preceding.—Scirrhus (chronic mammary

[5] See causation table appended.

[6] See cases detailed in Brit. Med. Jour., March 12th, 1892.

carcinoma), encephaloid (acute mammary carcinoma), colloid carcinoma, intracystic carcinoma (duct cancer), alveolar sarcoma, melanotic epithelioma, melanotic sarcoma, osteoid sarcoma, myxoma, chloroma, and intracystic sarcoma, with a few more of dubious authenticity.

Stratford place, W.

THE PLATE CULTIVATION OF ANAEROBIC BACTERIA.

BY H. S. FREMLIN, L.R.C.P. LOND., M.R.C.S. ENG.

I HAVE previously described[1] a method of plate cultivation of bacteria under anaerobic conditions. The essential features were the use of pyrogallic acid in alkaline solution for the absorption of oxygen, a small air space, and an efficient seal to the apparatus so that there could be no leakage of air into the chamber in spite of the partial vacuum created by the action of the pyrogallic acid. In addition I advocated the use of a colour test as a means of indicating when all free oxygen in the apparatus had been absorbed. I showed that methylene blue in the presence of sugar and an alkali furnished a most delicate test of the presence of oxygen, the blue colour disappearing when all oxygen has been removed or absorbed and returning if fresh oxygen be admitted, so that the colour test might be relied on to indicate whether anaerobiosis had been set up and maintained or not.

The apparatus I then described was designed to hold only one plate but I have since used an apparatus having a larger capacity so that it is capable of holding six plates. This apparatus is designed on precisely the same principles as the smaller one. It consists of a glass chamber seven and a half inches high and five inches in diameter, having the rim turned out in a wide flange. This flange is carefully ground. The lid has a corresponding well-ground surface, so that these ground surfaces of chamber and lid fit accurately. A copper stand, somewhat similar to that used in the Botkin apparatus, is used to hold the plates; it differs from the Botkin stand, however, in having two moveable handles to allow it to be raised from, and lowered into, the chamber and in having on one side carriers to support a small test-tube in a vertical position; this test-tube is to contain the methylene-blue indicator.

To carry out the process required for the establishment of anaerobic conditions the method of procedure is as follows. The rim of the chamber is well vaselined, the plates are placed in the stand, and a small test-tube of ordinary sugar bouillon or other reducing fluid, coloured with a drop of saturated alcoholic solution of methylene blue, is placed in the support provided for it. Eight grammes of pyrogallic acid are first introduced into the chamber, followed by 80 cubic centimetres of a 10 per cent. solution of caustic potash. The stand, carrying the plates and tube, is now lowered into the chamber by the handles and the lid is carefully put on. The whole apparatus can then be incubated. The process of the absorption of oxygen from the chamber and its contents by means of the alkaline pyrogallol solution can be noted by observing the change in colour of the methylene-blue indicator; as anaerobiosis is established the colour entirely disappears. If the colour does not disappear it is evident that there is a fault either in the apparatus or technique, and this must be found and remedied. It must be remembered that the absorption of oxygen within the chamber causes a considerable tendency to leakage of air inwards which must be prevented by careful attention to the seal. Bacteriologically the results obtained in this large chamber are quite satisfactory and, as before, I have found that the bacillus tetani can be readily grown in it.

I find sugar bouillon, coloured with methylene blue, convenient as an indicator, as sugar bouillon is always at hand in a laboratory. A reducing fluid prepared with water, glucose, and alkali is equally effective. Methylated spirit with a little alkali and coloured with methylene blue furnishes an even more delicate reagent, but when incubated at 37° C. sufficient spirit evaporates to check the growth of bacteria in cultivation. I do not, therefore, advise its use. I have compared the methylene-blue test with the reaction of alkaline pyrogallol solution in the presence of oxygen. A solution of caustic potash was poured into a beaker and some crystalline pyrogallic acid was placed in a watch-glass and supported over the beaker in such a position that it could be shaken into the alkaline solution below. The beaker and watch-glass and a control tube of sugar broth coloured with methylene blue were placed in the large chamber, in which anaerobic conditions were then set up. When the methylene-blue solution was decolourised the watch-glass with its contained pyrogallic acid was tilted into the alkaline solution in the beaker without opening the chamber; the mixture remained colourless. In another experiment the pyrogallic acid was shaken into the alkaline solution *before* the blue colour had entirely disappeared from the methylene-blue tube. Here again the pyrogallic alkaline solution remained colourless. Hence it would seem that either methylene blue is a more delicate test for the presence of oxygen, or else that the oxygen which enters into combination with the methylene blue is more difficult to extract than the oxygen entangled in the caustic potash solution.

Government Lymph Laboratories, Chelsea Bridge, S.W.

[1] THE LANCET, Feb. 21st, 1903, p. 518.

CASE OF

SPONTANEOUS GANGRENE OF THE SKIN IN A HYSTERICAL FEMALE.

BY W. A. MEARNS, M.A., M.B. ABERD.

THE following notes on a case of the so-called spontaneous gangrene of the skin in hysteria may be of interest.

The patient, aged 24 years, consulted me about the middle of January, 1904, for a skin trouble on the lower part of her neck. She was a delicate girl, very anæmic, and was known to be of a hysterical disposition. She was very irregular in menstruation. The skin lesion was of the nature of a dark red spot on the lower part of the neck and just about the middle third of the right clavicle. The area involved was rather larger than a half-crown piece and had appeared, she stated, a day previously and had been preceded by a hot, burning sensation in the part affected. The lesion was somewhat obscured by an ointment which she had applied on her own initiative and a temporary diagnosis of herpes was made and a paint composed of one ounce of flexible collodion and one drachm of tincture of cannabis indica was ordered, while internally salicin, phenacetin, and quinine were given to combat the pain.

I did not see her until nearly a week later, when I was sent for, as her neck was said to be much worse. After examining it I found the original part involved to have become quite black in colour and evidently gangrenous and on raising the surface slightly with a forceps a sloughy débris of pus-like matter could be seen beneath. Adjoining this and extending downwards and inwards over the clavicle was another area of similar size but of a dull white colour. It was irregularly oblong in shape and was circumscribed by a narrow reddish margin. As in the former case the lesion had been preceded by a feeling of great heat and burning in the skin affected. The patient was in considerable distress and morphine in solution had to be resorted to in order to induce sleep. Ferrous carbonate bipalatinoids were also ordered. Boric acid fomentations were applied to the sloughing area and after a time this was successful in separating the slough and a raw, red surface was left exposed. By the next day the second area involved had become much blacker in colour and it also gradually became gangrenous and was separated as a slough by fomenting. Subsequently a new area of skin was attacked extending from the original spot up towards the right ear. Here also the same cycle of changes was seen, ultimately ending in gangrene of the diseased skin. The appearance was exactly as if the skin had been burned by a corrosive acid. Thereafter the lesions extended progressively below the clavicle down to the right breast, each in turn being of about the same size and the skin being always progressively involved. In all there were seven distinct areas affected.

As there was now a large raw surface and more careful dressing was requisite than could be got at her home I advised the patient to go into hospital and she was admitted into the Chalmers Hospital, Banff, under the care of my chief, Dr. W. Fergusson. After her admission there was no

further extension of the lesions. Gradually all the sloughs were removed by fomenting and a large raw area was left extending from just below the right ear down to the right breast. As the area was so large skin grafting was resorted to but the grafts refused to hold and a subsequent trial gave no better results. Boric acid ointment was then applied for a time, while later red lotion on lint gave excellent results. Convalescence was slow and protracted, the part granulating very slowly indeed. Her general condition became much better in hospital, iron having been persevered in steadily, and except for a slight rheumatic attack she improved daily. Her temperature throughout was slightly above normal, usually about 99° F. Twice, however, abnormal temperatures were registered, once 110° and again 105°, but on both occasions when the nurse again took the temperature it was found to be normal. The cicatrix several times broke down when nearly completely healed, but eventually after nearly five months in hospital she was discharged with the part quite healed but with an exceedingly large disfiguring cicatrix, or rather cicatrices, on her neck and breast.

Banff, N.B.

A CASE OF BULLET WOUND OF THE BRAIN

IN WHICH THE BULLET LODGED ABOUT 12 CENTIMETRES FROM THE POINT OF ENTRANCE AND WAS EXTRACTED FROM A DEPTH OF 6·5 CENTIMETRES FROM THE SURFACE OF THE HEAD.[1]

BY WILLIAM SHEEN, M.S. LOND., F.R.C.S. ENG.,

SURGEON, CARDIFF INFIRMARY; CONSULTING SURGEON, SEAMEN'S HOSPITAL, CARDIFF; SURGEON, IMPERIAL YEOMANRY FIELD HOSPITAL, SOUTH AFRICA, 1900.

With a Note on the X-ray Methods in the Case by WILLIAM MARTIN, *M.A., M.B., C.M. Glasg., Assistant Surgeon to, and Medical Officer in charge of, the Electrical Department, Cardiff Infirmary.*

A MAN, aged 23 years, a stoker, was struck on the forehead by a revolver bullet while standing on the cab of his engine. The bullet was fired from a garden near the railway line at a distance of from 25 to 30 yards. The man fell but loss of consciousness was only momentary. The wound was enlarged and probed without result. He walked to a train and was taken a distance of about 20 miles to the Cardiff Infirmary and was admitted there at 6.30 P.M. on Nov. 28th, 1903, three and a half hours after the accident.

Detailed examination immediately after admission showed an entire absence of symptoms. There was no evidence of the position of the bullet. Three hours later vomiting occurred. In the morning he was semi-conscious, grunting, moved his limbs when told to, and said "yes" and "no." The reflexes were unaffected. The pupils were equal and were of medium size and reacted. Slight paralysis of the lower side of the face was present on the right side. The temperature was 99·8° F. and the pulse was slow and full. The head was shaved. A skiagraphic view showed indistinctly the position of the bullet. Antero-posterior and lateral x-ray photographs were taken and these being developed the man was anæsthetised on Nov. 29th at 3 P.M. In the intervening period his temperature had gradually risen and was now 102°. The entrance wound was situated 2·5 centimetres to the left of the middle line and 2·5 centimetres above the orbital arch; it had contused edges and had been enlarged by a crucial incision. The bone and dura mater had been lacerated and brain substance oozed from the wound. There were no fissures radiating from the wound in the bone. A suitable "toilet" was made of the wound and it was partly closed, a gauze plug being left in its centre. The developed plates showed the bullet well, but owing to its position no attempt was made to extract it.

The subsequent progress was one of slow general improvement complicated by the incidence of paresis of the right arm and right side of the face with "motor" aphasia, symptoms all of which gradually subsided. The temperature reached normal on the fourth day after operation and remained there. Examination of the optic discs by Mr. F. P. S. Cresswell on Dec. 1st showed them to be healthy, and a blood count by Dr. Cyril Lewis on Dec. 2nd gave 10,400 leucocytes per cubic millimetre. There was loss of control of the excreta until Dec. 3rd. The paralysis of the face was limited to the lower part, the associated movements being good. Weakness of the right arm was noticeable on Dec. 1st and aphasia on the 2nd. The paretic symptoms became more marked during the next four days, when slow improvement commenced. The arm showed wrist-drop, dynamometer grip *nil*, inability to shrug the shoulder, and ability to move the elbow- and shoulder-joints and to rotate the forearm. No sensory disturbances were noted at this time but later there was numbness in the little and ring fingers which after the second operation extended to the middle and index fingers. The aphasic symptoms were of the ordinary "motor" type. Whilst unable to speak, to repeat or to name objects, comprehension was perfect and he was always able to indicate the number of syllables in a word. No disturbances of the special senses were present. The stereognostic sense was good. After passing through a state of mental confusion characterised by laughing and "silliness" he completely regained consciousness by Dec. 7th. The first person he recognised was the man who shot him; he called out this man's name and indicated a dislike to his presence. On Dec. 16th the dynamometer grip was right 40, left 60, and the facial paralysis was almost gone. The aphasic symptoms disappeared more slowly but by the end of December only occasional hesitation or difficulty in getting out words remained together with confusion and stuttering when he embarked on a long sentence. He remembered his accident and admission to the infirmary, then there was a blank for three or four days, when he remembered his mother sitting by his bedside.

The only further points to be noted up to the date of the second operation were intermittent attacks of left parietal and frontal headache and on Dec. 18th a bad attack of general headache with temporary increase in the aphasia and arm weakness; this passed off. On Jan. 16th he got up and on the following day slight weakness of the right leg was noted, together with a tendency to throw out the right foot when walking. The right knee-jerk was found slightly more marked than the left; previous examinations had shown no difference.

The second operation was performed on Feb. 9th—i.e., ten weeks after the injury. The forehead wound was soundly healed. Several skiagrams had been taken and a stereoscopic view was prepared showing the position of the bullet. Chloroform was administered by Dr. W. G. Williams. Mr. A. Brownlee, the resident medical officer, assisted, and Mr. Martin, Dr. T. W. Parry of Ferndale (who first saw the patient), and other gentlemen were present. A flap was turned down behind the left ear and a one-inch disc of bone was removed above and behind the meatus. This bone opening was enlarged downwards and forwards, the dura mater was opened, and search was commenced for the bullet by entering a probe 3·5 centimetres above the meatus and 2·5 centimetres behind the inter-meatal line and passing it in in the horizontal plane of the head for a depth of 6·7 centimetres. The bullet not being felt, Hedley's telephone probe was passed in the same line and after feeling a moment a rather doubtful tap was heard. The probe was withdrawn and a pair of ordinary dressing forceps was passed in and felt the bullet which bobbed about in an elusive way at the end of the forceps, suggesting the possibility of its being in a cavity. A first attempt to grasp and to remove it proved unsuccessful but on reintroducing the forceps it was seized and removed with a little adherent brain substance. The length of forceps introduced measured 6·5 centimetres from the general skull surface. As there was considerable increase of intracranial tension some of the brain substance had to be removed before the dura mater could be brought together. The disc of bone was replaced and the wound was closed with drainage.

The after-progress was uneventful. There was no paralysis or aphasia. The tube was removed on the day following the operation and the stitches were removed on the eighth day when the wound was found to be healed completely. Exactly three weeks from the operation the man got up. There was still slight weakness of the right arm and leg. The dynamometer grip was right 60, left 90. Dimness of vision was complained of, particularly in the right eye. On Feb. 22nd Mr. Cresswell

[1] A paper read before the Cardiff division of the South Wales and Monmouth branch of the British Medical Association.

reported: "A slight contraction of the field of vision outer side of right eye; in both eyes the optic discs are somewhat pale in the temporal half and arteries small; otherwise the fundi are normal and the media clear. Vision: R. E. $\frac{6}{24}$, J. 8; L. E. $\frac{6}{6}$, two letters, J. 8." On March 24th a further report stated: "Patient has mixed astigmatism. Vision: R. and L. E. $\frac{6}{6}$, J. 16. Corrected by glasses, $\frac{6}{6}$, J. 1. Pupils equal, semi-dilated. Right does not react so well to light as left. Fundi normal. Visual field: L. E., normal; R. E., a slight contraction in lower and outer part of field." The patient was supplied with suitable glasses. One other interesting point should be mentioned. When the hair commenced to grow after shaving it failed to grow in the right temporal region. The hair was slowly growing over this part when the patient left the hospital. He was discharged on March 25th, 1904, having been kept in for so long a time so as to be under observation.

Such cases as the above are necessarily rare in civil practice, but they are also rare in military, particularly modern military, practice. My own South African experience,[2] coupled with such examination of the literature of the South African and other recent wars as I have been able to make, has not furnished a parallel case—i.e., I have not been able to find a case where the bullet has been removed from the depths of the brain entirely on the results of x-ray localisation. Mr. W. H. A. Jacobson's observations[3] are the most instructive and complete that I have been able to find; he gives details of one case (Brantz) where x-ray localising methods resulted in the successful removal of the bullet, but the depth of the bullet is not stated.

The various interesting points of the case are best considered *seriatim*, but before doing so I wish to express my great indebtedness to Mr. Martin (whose report follows) for his careful and accurate localising work which helped to bring the operation for extraction to a successful issue.

Why did not death immediately ensue?—In studying bullet wounds of the brain one is struck with the uniform fatality of the cases when the bullet has passed right through the head or when it has lodged deeply. Injuries of the fronto-parietal type, as Makins has pointed out,[4] are particularly fatal. This fatality is due to the high velocity of the modern small-arms bullet which, as it rushes into the brain, scatters waves of destruction in all directions; whereas a spent bullet or a bullet of initial low velocity simply pushes its way into the brain substance and the damage it does is largely limited to its track. An indication of the damage done to the cranium by a high-velocity bullet is seen in the fissures which radiate in the bone around the wound of entrance; such fissures were not present in my case. Similar destructive waves would be produced in the brain tissue beneath. The size and structure of the bullet are other factors in determining the amount of damage which need not be further dwelt on. The exact course taken by the bullet—in my case above the ventricles and basal ganglia—also, of course, helps to determine a favourable result or the reverse.

The initial delay of symptoms.—The gradual onset of symptoms some hours after injury must be attributed to a localised "œdema of the brain." There was no concussion—so common in injuries by high-velocity bullets—and the symptoms were not sufficiently immediate for hæmorrhage and not sufficiently delayed for inflammatory processes.

The leucocyte count.—This, together with the absence of optic neuritis, was valuable in negativing meningitis or commencing abscess, particularly in the presence of a raised temperature.

The bullet track.—A study of these cases shows that surgeons recognise a "bullet track" along which probes can be passed. In my case there was no bullet track. The brain tissue seemed to have closed up behind the bullet. Similarly in using instruments in the second operation it was noticed that one instrument did not leave a track for the next. Hence, the necessity for avoiding reintroduction of instruments (*vide infra*).

Probable course of the bullet and point of lodgment.—Knowing the localising points careful observations on a skull and brain of about the same size as the patient's enabled me approximately to determine these. At one time it appeared possible that the bullet had been arrested in its course by the tentorium cerebelli—a not unlikely thing to happen to a bullet travelling with low velocity—and had become imbedded in that membrane. This condition, which would have increased the difficulty of extraction, was negatived by later photographic methods. Entering, then, 2·5 centimetres above the left orbital arch and the same distance to the left of the middle line, the bullet passed backwards, downwards, and slightly inwards (the man probably had his head bent forwards when struck) for a distance of 12 centimetres, lodging at a depth of 6·5-7 centimetres in relation to a point 3·5 centimetres above the external auditory meatus and 2·5 centimetres behind the inter-meatal line—i.e., lodging about 1·5 centimetres from the middle line and 2·5 centimetres above the tentorium. The bullet traversed the left frontal lobe and the innermost fibres of the corona radiata, passing gradually backwards and inwards into the callosal convolution, in the hinder part of which it lodged, the corpus callosum being therefore probably uninjured.

Comparison of symptoms.—It is difficult to compare the symptoms exactly with the anatomical data as one does not know to what extent they were due to the primary passage of the bullet and to what to the secondary disturbances around the bullet path. There was interference with the functions of Broca's area, probably due mainly to subcortical damage, as there was not the slightest impairment of the understanding of words and the man could always correctly indicate the number of syllables in a word. The motor areas for the face and arm were interfered with less and that for the leg hardly at all. There was hardly any disturbance of sensation, indicating the little that the callosal convolution had to do with that function.

Eye symptoms.—The disturbance of vision after the second operation was somewhat more than could be accounted for by the astigmatism present and, as will be seen by a comparison of Mr. Cresswell's two reports, there was some improvement in the course of a month. It is quite possible that at the second operation there was some temporary injury to the connexions of the left half vision centre.

Localised baldness.—This occurred on the side opposite to the injury. Was it due to some trophic disturbance in the skin or to the action of the x rays, this being the side that was exposed to the rays? The exposures made were short, on no occasion exceeding two minutes, and there were never more than two photographs taken on one occasion. Fluorescent screen observations were only made once for a short time and that was on the day of admission.

Was the operation for extraction of the bullet justifiable?—The man was nearly free from symptoms and apparently on the road to complete recovery. There were, however, certain symptoms—viz., intermittent headache, pain on moving the head, and at least one definite severe attack of headache with temporary remission of symptoms. Then one realises that the heavy bullet may change its position; it being felt as if in a cavity at the second operation supports this possibility. Cases where the foreign body is left often do not do well; in addition to headache there may supervene mental disturbances, fits, cerebral abscess or softening, various paretic symptoms, &c. The disturbing influence on the patient of the fact that a foreign body is in his brain has also to be taken into account: in this case the man was a factor in determining operation, for he was very desirous to have the bullet removed. Finally, in approving the justifiability of removal one might point out that an operation conducted aseptically and carefully, even if the bullet were not discovered, would not be likely to do any harm, and if there were, an increase of intracranial tension, as in this case, would do good quite apart from the bullet extraction.

Value of the x rays.—The chief point in the case is the illustration of the value of localisation by the x rays. It would have been impossible to localise the bullet to any serviceable degree without such aid. Unfortunately, however, one cannot say that the extraction of a bullet is always assured after accurate localisation. The probability lessens the greater the depth of the bullet from the surface, for the deeper the probe or other instrument has to go the more likely is its point to deviate from the exact path.

Instruments required in these cases.—The telephone probe I used was wrongly constructed so must be dismissed as a factor in this case. Practically the extracting forceps found the bullet. The telephone probe, however, is of undoubted utility but in order to obviate as far as possible the reintroduction of instruments a "bullet-probe forceps" is desirable, an instrument which can be attached to the

[2] Imperial Yeomanry Hospital Reports, vol. iii. Surgical Report of the Field Hospital and Bearer Company, by Charles Stonham. London: A. L. Humphreys.

[3] Jacobson and Steward: The Operations of Surgery, vol. i., fourth edition, 1902, p. 280: "Operative Interference in the Case of Foreign Bodies in the Brain."

[4] Makins: Surgical Experiences in South Africa.

telephone receiver and which both detects and extracts the bullet. Further, such an instrument should be graduated so that it can be at once noted when it has entered the required depth. On these lines I am having certain forceps constructed with suitable telephonic attachments and I purpose to publish a detailed account of them at a later date.

The patient returned to work on July 4th last, and has, so far as I know, continued at work. He discarded his glasses, saying that he could see better without them, and is in all respects well.

Note by MR. MARTIN.—In all cases before the removal of foreign bodies is attempted accurate localisation is advisable but when the foreign body is inside the cranium such localisation is absolutely necessary. In such cases as the above, without the aid of the x rays surgery is helpless. In Mr. Sheen's case the ordinary routine was gone through. Shortly after admission a screen examination was made to get some idea of the locality of the foreign body and skiagrams were taken. When the question of removing the bullet was brought forward skiagrams were taken laterally and antero-posteriorly and localisation was performed by the double impression on the single plate and the Mackenzie Davidson cross-thread localiser. By this means it was found that the depth of the bullet from the plate was 6·9 centimetres. About five centimetres were allowed for scalp, &c., intervening between the plate and the external surface so that it was calculated that the centre of the bullet, approached on the horizontal plane of the head from a point 3·5 centimetres above the left meatus and 2·5 centimetres behind the intermeatal line, would be found at a depth of 6·4 centimetres. This distance was checked by the antero-posterior view which gave the centre of the bullet between 6·4 and 6·5 centimetres in a line from outside the bony cranium.

The night before the operation for removal of the bullet, in order to make certain that no serious alteration in its position had taken place since the localisation, stereoscopic impressions were made and from the wet plates prints being obtained by artificial light the surgeon was enabled to see the bullet *in situ* before beginning the operation. A stereoscopic view is of great help, giving in the matter of relations and direction confirmation of other methods of localisation. Stereoscopic views of foreign bodies lying deep in the cranial cavity do not, however, give a very clear idea of the exact depth owing to the absence of intervening landmarks in the same way that distances at sea are so difficult to estimate. The uniformity of the surfaces of the parietal bones accentuates the difficulty in cases such as this one.

From the stereoscopic plates a "plastographic" view was made, one print in green being superimposed upon the other in crimson, to be viewed through green and crimson glasses. This, I understand (February, 1904), is the first time that this method has been applied to x-ray work and I venture to suggest that there may be a future for the method as a means of illustrating stereoscopically x-ray photographs in medical journals.

Cardiff.

CONGENITAL WORD-BLINDNESS.[1]

BY SYDNEY STEPHENSON, M.B., C.M., F.R.C.S. EDIN.,
OPHTHALMIC SURGEON TO THE EVELINA HOSPITAL, ETC.

THAT some children are much slower than others in learning to read must be an observation as old as the art of reading itself. It is, however, only within the last few years that such tardiness in otherwise bright children has been recognised by a special name and studied with some approach to scientific accuracy. The first writer to describe the condition was Dr. W. Pringle Morgan.[2] His patient was a lad, 14 years old, who, although intelligent in every other way, experienced the utmost difficulty in learning how to read. The defect was so marked that despite seven years' constant application he was able to spell out only monosyllabic words. Figures, curiously enough, he could read fluently and simple arithmetical sums were done fairly well. A couple of years after the publication of Dr. Morgan's modest communication Dr. H. C. Bastian[3] described a similar case in a young man, aged 18 years. This patient was so extremely slow in learning to read that his tutor almost despaired of ever being able to teach him. Dr. James Hinshelwood[4] of Glasgow next took up the subject, analysed the cases previously reported, and added two new examples to the growing list. To Dr. Hinshelwood undoubtedly belongs the credit of having been the first to describe the condition scientifically, to assign it to a defect in the visual memory centre for words and letters, and to name it "congenital word-blindness." It is highly probable that but for Dr. Hinshelwood's article the two previous communications would have failed to attract the attention they have since received. Mr. Nettleship[5] next described five cases and in doing so spoke of having been familiar with the condition for many years, thinking and speaking of it as a congenital want of power to acquire knowledge by printed signs. In the year 1902 Dr. Hinshelwood[6] reported two further cases and took the opportunity of elaborating several of his previous arguments with regard to the essential nature and characteristic symptoms of the condition. The other reported cases up to the date of writing include one by Lechner[7] and two by Wernicke.[8]

So far, then, 14 cases of congenital word-blindness have been reported by six authors. To conclude, nevertheless, that this congenital defect is rare on account of the small number of cases reported in literature would be to commit a logical fallacy. Almost everybody who has written on the subject, notably Dr. Hinshelwood, has commented upon the fact that cases are not so rare as the scarcity of records might lead one to infer. Slight cases are almost certain to be overlooked in the hospital out-patient room where surgeons are busily occupied and parents seldom capable of giving a clear account of their children's ailments. On the other hand, congenital word-blindness, especially when of slight degree, is much more likely to be recognised in the consulting-room and as a matter of fact most of the cases appear to have been met with in that way. At the same time, there is no present ground for the belief that the condition is commoner in children of the poorer classes. One point should be mentioned—namely, that 85 per cent. of the cases have been reported by ophthalmic surgeons, an observation that goes to show that patients, in the first instance at any rate, usually seek special rather than general medical advice.

The subject of word-blindness is interesting both from the medical and from the educational standpoint, a fact that leads me to place on record two instances—one slight and the other severe—that have fallen under my notice. The facts are as follows.

CASE 1.—The patient, a boy, aged nine years, was seen on Dec. 10th, 1898. Although a painstaking boy he had experienced unusual difficulty in learning to spell and to read. Arithmetic also caused him difficulty. He complained that his eyes got sore after doing his lessons. He had considerable powers of observation and of insight. For example, he could carry in his mind the details of a machine or of a building and could reproduce them on paper. He reasoned well. In disposition he was considerate and sympathetic. His father, an exceptionally cultured man, believed that his son's failure to read was due not to a mental but to a developmental defect. The boy was of a nervous temperament but was tolerably well-grown for his age and apparently in good health. His relative visual acuity was almost normal (V. = $\frac{6}{6\text{iii.}}$ and No. 1 Jaeger), but he deciphered the letters on the Snellen distant type in a curiously hesitating way, a difficulty that extended both to the large and small letters. The small types of Jaeger were read slowly and with many mistakes, but what struck me as peculiar was that the larger type on the same test was read with just as must difficulty. Under a cycloplegic: R. V. = $\frac{6}{18}$ + 1·50 = $\frac{6}{6}$; L. V. = $\frac{6}{18\text{ II.}}$ + 1·50 = $\frac{6}{6}$. The fundi were normal; the fields of vision for white were full; the colour sense was not noted. Spectacles (+1·0 D. spherical) were prescribed for reading and the father was advised to educate the lad privately. When I saw the patient again, some six months later, I found that he had

[1] A communication presented to the Society for the Study of Disease in Children, Session 1903–04.
[2] Morgan: Brit. Med. Jour., Nov. 7th, 1896.
[3] Bastian: Aphasia and other Speech Defects, London, 1898.
[4] Hinshelwood: THE LANCET, May 26th, 1900, p. 1506.
[5] Nettleship: Ophthalmic Review, 1901, p. 61.
[6] Hinshelwood: Ophthalmic Review, 1902, p. 91.
[7] Lechner: Ned. Tijd. voor Geneeskunde, 1903, No. 5.
[8] Wernicke: Centralblatt für Praktische Augenheilkunde, September, 1903.

made considerable progress with his reading. The boy died from influenzal peritonitis on Jan. 15th, 1904, that is to say, some five years after he first came under my notice. According to information kindly furnished by his father distinct progress had been made in the last year of life. His spelling had improved, especially of Latin words, a language that is more phonetic than English. The improvement had extended to reading and to arithmetic. He was learning to draw from the solid and was doing it well. "I am exceedingly glad," the father wrote, "that, following your advice, I did not send him to school. Now that the little fellow is gone it would have been a life-long regret to me if I had embittered his last year of life by placing him where he could not have learned without pain."

CASE 2.—The patient, a boy, aged ten years, was seen by me on Jan. 15th, 1903. This excitable lad had been affected for about five years with spasmodic movements of the face, eyelids, mouth, and neck, especially marked when under the influence of emotion, with a so-called "habit spasm," in fact. He was brought because he had experienced great difficulty in learning to read and was believed on that account to be "short-sighted." He had never suffered from scarlet fever, rheumatism, or "growing pains." His heart sounds were normal and he was not subject to sore throats, such as many rheumatic children are affected with. He is deaf (= watch close to ear) on the right side, owing to long-standing otorrhœa. The family history was as follows. His great-grandmother died at the age of 75 years from a third stroke and she was paralysed down one side for many years before her death. His mother, maternal grandmother, and younger sister had all been affected with rheumatism, the last-named after an attack of scarlet fever. His eldest sister, now 13 years of age, read well when she was eight years old. His father and mother both come from large families, but no reading defect amongst the members had ever been heard of. There were no insanity or hysteria or "fits" and no miscarriages or stillbirths. Upon examining the lad sight was found to be R. = $\frac{6}{6}$; L. = $\frac{6}{4}$. Atropine was prescribed and a few days later refraction was estimated with the following results: R.V. = $\frac{6}{6}$ $\frac{+1\cdot50}{+3\cdot50090^\circ}$ = $\frac{6}{4\cdot5}$; L.V. = $\frac{6}{6}$ + 4·090° = $\frac{6}{4\cdot5}$. The fundi were normal. Glasses were prescribed for constant wear. About a year later (Jan. 13th, 1904) I obtained a much more complete account of the patient's tastes, peculiarities, and defects. He was described as being "as bright as a lark and as sharp as a needle." He pondered over books but did not enjoy them owing to the difficulty of reading them. Handwriting was read as badly as printed matter and figures were read as imperfectly as either. Dictation was badly done. Although unable to express himself in writing yet he could copy sentences from a printed book correctly. He was almost unable to learn by heart from a printed page but he could memorise quickly and retain tenaciously anything told or read to him. Thus, he learned by rote 14 verses, each containing four lines, in two days and repeated them to me without hesitation or mistake. His memory was excellent. At such games as cricket, football, draughts, and dominoes he could play well. The lad, before he came under my notice, was educated at a boarding-school at the seaside and an inspection of his term reports brought to light certain interesting points. From the earlier reports it seemed evident that his teachers had no idea of the lad's peculiarity, for they characterised him as "inclined to be idle" (Christmas, 1901). In summer, 1902, we find that "he has made especial progress in arithmetic," although it is to be noted that he obtained only 20 per cent. of the total available marks in that subject. A similar comment with regard to arithmetic is made in the report for the term ended Dec. 17th, 1903. In short, the boy's strong subjects were divinity, history, and geography, in all of which he learned the work presumably by the exercise of a very active auditory memory.

It cannot be doubted, then, that there exists a congenital condition not necessarily associated with any other defect (mental or physical) where the learning of letters or of words from printed or written characters is difficult or, it may be, even impossible. This congenital letter- or word-blindness may be due, as Dr. Hinshelwood and Dr. Lechner surmise, to a congenital defect in the visual memory centre for words and letters. The fact is probably not without significance that of the total number of cases 13—that is, 82·25 per cent.—have been met with in males. The ages of the patients (given in 15 instances) ranged from seven to 23 years and averaged 13 years. In other words, they usually fell under notice at an age when the nature of their peculiarity would be forced upon the attention of parents and teachers. A neuropathic family history was forthcoming once only—viz., in one of Wernicke's cases—where the father, an intemperate man, died insane and the patient's elder brother was weak-minded. It may be noted in passing that another brother could play several games of chess simultaneously and also without seeing the chess-board. The two brothers of one of Mr. Nettleship's patients were stammerers. Some of the sufferers from alexia have evidently been of a nervous temperament, as witness one of Wernicke's patients, a female, 19 years of age, said to be hysterical; Lechner's case, a boy, 13 years of age, said to be "very nervous"; and in the two cases described in the present communication. The previous illnesses of the patients offer nothing calling for particular remark. As a rule they enjoyed good health.

Vision was recorded in ten of the cases and was normal in all except two. Refraction, specifically mentioned ten times, was emmetropic once and hypermetropic with or without astigmatism in the remaining nine cases. The fundus oculi was examined in six patients with negative results. The fields of vision and the colour sense were normal in the two cases in which they were investigated.

General intelligence was good in 13 of the 16 cases and may well have been so in the other three cases, but no definite note was made with regard to the point. The ability to read figures existed in seven of the cases, was not noted in seven cases, and was poor in my own cases. In this connexion I may just say that several years ago I saw a lad, aged ten years, who experienced extraordinary difficulty in reading figures without any corresponding difficulty in regard to letters and words. There was a trifling amount of hypermetropia (0·75 D.) but his eyes were otherwise normal. Unfortunately, I saw the patient once only and have failed to trace him since. As to music, mentioned twice only in the series, it was stated that patients experienced no trouble in that respect. The auditory memory appears to have been developed highly in most of the patients. Thus, one of Wernicke's patients could speak two languages correctly; one of Hinshelwood's patients concealed his difficulty in reading for a time by learning his primer off by heart; Lechner's patient is stated to have known the contents of his school books by rote; and my second patient could memorise well and quickly anything told or read to him.

What improvement can be expected in these cases? It will naturally vary according to the original severity of the case and the educational means adopted. It may be considerable. It may, furthermore, take place comparatively quickly, as shown by one of Hinshelwood's cases, where a boy who had not been able to read after upwards of four years at school made very considerable progress in recognising letters by dint of constant practice during seven weeks. The improvement in these cases is usually described as "slow but satisfactory." Perhaps the most striking case is one mentioned by Nettleship, where a boy who suffered from a marked degree of alexia eventually learned to read easily and 19 years after he was first examined had become a lawyer. It may be concluded therefore that with special training even severe cases of congenital word-blindness are capable of considerable improvement. It is clear, moreover, that the earlier such training is begun the better are the results likely to be. Hence the importance of recognising the defect at as early an age as possible.

The diagnosis offers few difficulties if once the fact be firmly grasped that there is such a thing as congenital inability to read. At least, difficulty would be likely to arise only when the word-blindness co-existed, as in my second case, with a considerable error of refraction. Even in those circumstances the history should guard one against error, while the fact that the patient experienced exactly the same difficulty in reading large as he did small print would strongly suggest the presence of this curious congenital defect. It is interesting to add that more than one of the case-histories comment upon the fact that the patient never read for pleasure. In view of the particular attention now being paid to degeneracy amongst our poorer school children it is pretty safe to predict that congenital alexia will be found to be commoner than hitherto suspected, even by the medical profession.

Wolbeck-street, W.

EPITHELIOMA OF THE TONGUE IN WOMEN,

WITH NOTES OF TEN CASES.

BY CHARLES R. KEYSER, F.R.C.S. ENG.,

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COMPARATIVELY recently Mr. R. Clement Lucas[1] stated that in all his professional experience he had only once removed a tongue from a woman for epithelioma. As I have lately come across a few instances of this disease I have looked up the records of St. George's Hospital and the Cancer Hospital and have been able to find ten hitherto unpublished cases. There can be no doubt that epithelioma of the tongue in women is decidedly uncommon, but the frequency with which it occurs varies apparently according to the sources from which the cases are derived. Thus Butlin and Spencer[2] state that the disease is found in women in 15 per cent. of all cases of epithelioma of the tongue. This agrees almost exactly with the figures given by A. E. Barker,[3] who found that out of 293 cases of cancer of the tongue, collected from seven different clinics, both at home and abroad, there were 46 females, or 15·6 per cent. The same author, however, mentions that Berg noted 11 instances out of 21 cases at the Serafimer Hospital, Stockholm. On the other hand, from the Hospital Reports of four London hospitals I have collected 593 cases; of these 48 were in women. This works out at 1 in 12·3, or almost exactly 8·09 per cent. During the last 12 years at St. George's Hospital there have been 32 cases of epithelioma of the tongue subjected to operation; six of these were women or 18·8 per cent. Stanley Boyd and W. H. Unwin[4] collected 34 cases from private and hospital practice from 1891 to 1902 both inclusive; only three of these were in women. A. D. Fripp and R. H. J. Swan[5] found that epithelioma of the tongue was seven times more common in men than in women, whereas sarcoma was only twice as common and usually appeared between the ages of 15 and 30 years. Butlin and Spencer[6] also give the following list as showing how the percentage frequently varies according to different authorities: Jessett, 400 cases, 15 per cent.; Whitehead, 104 cases, 15 per cent.; Gurlt, 14·6 per cent.; Lardau, 16 per cent.; Czerny, 26 cases between 1878 and 1888, all males; Kocher, 69 cases, three women; Krönlein, 40 cases, two women; Wölfler, 3·4 per cent.; Weber, 12·2 per cent.; Sigels, 29·5 per cent.; Clarke, 28 per cent.; Paget, 36 per cent.; Bruns, 33 per cent.; and Hayn, 43 per cent.

Age.—This does not seem to differ to any appreciable extent in the two sexes. In men the disease is uncommon before 40 years and occurs with great frequency between the ages of 50 and 60 years. In 21 cases of cancer of the tongue in women which I have collected from various sources the average age was 54·7 years. J. Hutchinson, jun.,[7] however, refers to a case where a girl, aged 19 years, was afflicted with the disease; the growth was removed and recurred. It was again removed and two years later she was free from recurrence. Butlin saw a case of a woman, aged 24 years; Spencer one at the age of 22 years; and Harrison, quoted by the two former authors, saw one in a girl, aged 20 years, who died in less than six months.

Causation.—As in men, the new growth is almost invariably preceded by prolonged local irritation the result of either rough, carious teeth, a badly-fitting or broken tooth-plate, or syphilis of the tongue. The so-called pre-cancerous condition or leukoplakia is commonly, but not invariably, seen and runs a course identically the same as in the opposite sex. Judging from the cases I have been able to collect syphilis appears to be a by no means constant precursor of epithelioma of the tongue, as has been stated by some authors. Excessive smoking has also been adduced as a common predisposing cause, but this, again, does not appear to be at all common. Thus Barker[8] states that in Finisterre, where all the women smoke short pipes, Hertaux collected 100 cases of cancer of the lip and tongue; not a single case occurred in women. In Wales, also, where the women commonly smoke short clay pipes, the disease is not often observed. In only one case out of those which I have collected was there a history of smoking mentioned. In this connexion it is interesting to note the following facts issued in a special cancer supplement by the Registrar-General of Ireland for the year 1901. The total number of deaths from cancer in England, Scotland, and Wales has been steadily increasing from the year 1864 up to 1900. The figures now reach 8·3 for England and Wales and 8·0 for Scotland per 10,000 living inhabitants. In Ireland, although the same steady increase is seen, the death-rate has always been about 2 degrees lower and is now 6·1 per 10,000. The death-rate from cancer of the tongue in England and Wales for the years 1897 to 1901 inclusive is 11·6 per cent. Excluding the year 1901, which includes *all* forms of malignant disease of the tongue, the death-rate is 11·3 per cent. However, in Ireland, although the total number of cases of cancer is less than in England, yet the death-rate from cancer of the tongue for the years 1898 to 1901 inclusive is 13·3 per cent. or 2 per cent. higher. Whether this is due to the fact that many women in Ireland smoke I should not like to say, as there are many other factors which may be concerned. In neither the appearance, situation, course, diagnosis, prognosis, nor treatment does the disease in women appear to differ from that in men. The Museum of the Royal College of Surgeons of England contains three specimens of cancer of the tongue occurring in women (Nos. 2271A, 2273F, and 2273L), but neither the specimens nor their histories show any extraordinary features. The notes of my cases are as follows.

CASE 1.—The patient was admitted into the Cancer Hospital in August, 1886, for epithelioma involving the left half of the tongue; it was freely removed. The patient was last seen on April 6th, 1904, and was in very good health and showed no sign of recurrence.

CASE 2.—A woman, aged 68 years, was admitted into St. George's Hospital on April 6th, 1892, under the care of Sir (then Mr.) William H. Bennett. The history was that the tongue had been sore and painful for six months. There was no history of syphilis. The patient was losing flesh. There was a hard mass slightly raised above the surface on the left edge and tip of the tongue; some ulceration was present. The floor of the mouth was not involved; no glands were felt. The anterior half of the tongue was removed with scissors the next day; recovery was uneventful and the patient was discharged on April 23rd.

CASE 3.—A woman, aged 60 years, was admitted to St. George's Hospital on May 10th, 1893, under the care of Mr. T. P. Pick. For five weeks she had had pain in the left side of the jaw and side of the head and had noticed a little white spot on the tongue on the left side. There was a deep ulcer with raised and intensely hard edges on the left side of the tongue and the floor of the mouth was implicated. On May 20th the left half of the tongue was removed by Whitehead's method and on July 3rd the whole of the growth in the floor of the mouth was excised. The patient was discharged on July 12th.

CASE 4.—A woman, aged 23 years, was admitted into St. George's Hospital on Jan. 5th, 1894, under the care of Mr. J. W. Haward. Six weeks previously she noticed slight soreness and a lump on the right margin of the tongue. She had been wearing a tooth plate in the upper jaw for two years. There was no sign or history of syphilis. On examination there was an ulcer far back on the right side of the tongue with raised and irregular surface, whitish in colour, and very hard. No enlarged glands were felt. On Jan. 19th a nodule of the size of a split pea was noticed on the dorsum of the tongue near the ulcer. On the 27th the tongue was split down the middle line and the right half was removed by means of an écraseur. The growth was examined microscopically by Dr. H. D. Rolleston and was found to be a squamous-celled epithelioma. The growth recurred in the tonsil and glands of the neck and the patient died on Dec. 4th.

CASE 5.—A woman, aged 48 years, was admitted into St. George's Hospital on Jan. 18th, 1898, under the care of Mr. Pick. For eight months an ulcer on the left side of the tongue had been noticed (? due to a decayed tooth). The ulcer was not increasing in size and the patient was not losing flesh. On the left side of the tongue a large excavated ulcer with everted edges was seen; there was

[1] THE LANCET, April 2nd, 1904, p. 929.
[2] Diseases of the Tongue, 1900.
[3] Holmes's System of Surgery, 1883.
[4] The Practitioner, 1903.
[5] Ibid. [6] Loc. cit.
[7] The Practitioner, 1903.
[8] Loc. cit.

induration around and the ulcer was irregular in shape. The tongue was freely moveable and there was no pain. A jagged, carious tooth was found exactly opposite the deepest part of the ulcer. No enlarged glands were felt. On Feb. 3rd a small portion was removed and examined microscopically by Dr. Rolleston who pronounced it to be a squamous-celled epithelioma. On the 10th the left half of the tongue was removed by Whitehead's method. The patient made an uneventful recovery and was discharged on the 28th.

CASE 6.—A woman, aged 69 years, was admitted into St. George's Hospital on July 4th, 1900, under the care of Mr. Haward. For six months she had had much pain and had noticed a sore on the left side of the tongue which was rapidly increasing in size. She had had syphilis 25 years ago. A large ulcer with raised edges and an indurated base was found occupying the whole of the left side of the tongue from the tip to the anterior pillar of the fauces. It also extended beyond the middle line and involved the floor of the mouth, so that the patient was absolutely unable to protrude the tongue. She was losing weight and an enlarged gland was felt in the submaxillary region. On July 16th the growth was removed by means of an écraseur. Histologically the growth was a squamous-celled epithelioma but in addition showed evidences of syphilis. The patient died on the 27th.

CASE 7.—A woman, aged 72 years, was admitted into the Cancer Hospital on April 1st, 1903, under the care of Mr. F. B. Jessett. One year ago she noticed a small round ulcer on the dorsum of the tongue which caused pain in the ear. The ulcer gradually increased in size and "caused the saliva to dribble away." One sister died from cancer of the stomach. On examination the whole tongue was occupied by a cancerous growth which extended to the floor of the mouth. The tongue was quite fixed and there was an enlarged gland to be felt in the right submaxillary region. On the left side a gland of the size of a pea and freely moveable was present over a portion of the growth which extended down the left side of the larynx as far as the level of the cricoid cartilage. The patient died on July 7th.

CASE 8.—A woman, aged 52 years, was admitted into St. George's Hospital in February, 1903, under the care of Mr. A. M. Sheild. A sore place was first noticed on the left margin of the tongue in April, 1902. In July this became hard and a growth of the size of a pea became evident. No pain was suffered and the general health was good. At the posterior part of the left margin of the tongue there was a small rounded ulcer about one-third of an inch in diameter, with slightly thickened edges. The base was clean but somewhat indurated. The rest of the tongue was quite healthy and no enlarged glands were felt. On March 2nd an incision was made in the left submaxillary region and the submaxillary gland was removed; the tongue was then pulled down and the ulcer and the portion of the tongue around were excised. The patient made an uneventful recovery and left the hospital on the 23rd. The growth was examined by Dr. Rolleston who pronounced it to be an epithelioma. The patient was last seen in May, 1904, and was well and free from recurrence.

CASE 9.—A woman, aged 48 years, was admitted into the Cancer Hospital on August 18th, 1903, under the care of Mr. W. E. Miles. For three weeks she had noticed a sore place on the tongue, but for 14 years she had had "minute ulcers all over the tongue." 12 years ago "a tooth rubbed against the tongue" on the left side far back, but the tooth was removed. For 12 years also she had noticed white patches on the tongue. The patient had had two miscarriages but there was no other history of syphilis. On examination, far back on the left margin of the tongue was a warty ulcer surrounded by a small amount of induration. The dorsum was covered with leukoplakia. On the 19th a snip of the growth was removed for microscopical examination. The report was "rapidly growing epithelioma." The patient at first refused to have the tongue removed but ultimately accepted and the left half and the submaxillary glands were excised. On Nov. 14th there was no sign of recurrence.

CASE 10.—A woman, aged 42 years, was admitted into the Cancer Hospital on April 11th, 1904, under the care of Dr. F. A. Purcell. For three years she had noticed a growth on the tongue which had given her no trouble except for some slight pain lately. She thought it was caused by her artificial teeth. No history of syphilis was obtained. On the dorsum of the tongue, half an inch from the tip and extending from just internal to the right edge for three-quarters of an inch across the dorsum, was an oval ulcer about one and a quarter inches long; the edges were somewhat raised and the base was irregular and sloughy. There was very slight induration around and the edges were not hard or craggy. The tongue was freely moveable, the floor of the mouth being unaffected; there were no enlarged glands to be felt. On the 13th the right anterior half of the tongue was removed and an uneventful recovery followed.

In conclusion, I am much indebted to those surgeons who have kindly allowed me to publish their cases.

Wimpole-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A RARE FORM OF INTESTINAL STRANGULATION.

BY R. H. STEEN, M.D. LOND.,

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THE patient, a married woman, aged 49 years, was admitted into the West Sussex County Asylum on June 25th, 1901, suffering from chronic mania. She was quiet as a rule and had fixed delusions. Physically she was of moderate health and had slight mitral regurgitation. On Jan. 13th, 1904, she was seized with an attack of influenza, then epidemic in the institution. The symptoms were chiefly of the gastric type, with vomiting, slight pyrexia, muscular pains, and headache. She was better on the 16th and took her food well. On the 17th there were slight abdominal pain and distension which increased during the day. She was able to retain the greater portion of her food though slightly sick in the evening. On the 18th the tympanites became greater and she vomited all food. The vomit was not fæcal in character. She died on the afternoon of the 19th.

At the post-mortem examination the stomach and small intestine were found to be distended by gas. In the right iliac fossa the following condition was found. A volvulus had been formed by the terminal portion of the small intestine and through this the cæcum with the vermiform appendix had passed in the form of a loop. An internal hernia of the

FIG. 1.

Anterior view, showing the loop of the cæcum with constriction formed by a knot composed of small intestine.

FIG. 2.

Posterior view of the same.

large intestine had thus been produced, the constricting portion being the small intestine. The digestive tube had thrown itself into a slip-knot and it is difficult to imagine how this extraordinary state of affairs could have been produced. The attachments of the cæcum were probably loose in character, which may have accounted for two previous attacks of abdominal pain and tympanites which she had had in 1901, but the knot described must have been of recent formation, as no signs of plastic peritonitis were evident.

Chichester.

THE TREATMENT OF TETANUS BY INTRAVENOUS SALINE INFUSIONS.

BY VINCENT S. HODSON, M.B., B.CH. OXON.,
LATE RESIDENT MEDICAL OFFICER AT THE KASR-EL-AINI HOSPITAL, CAIRO.

IT seems to me worth while recording some fairly successful cases of tetanus treated by the above method inasmuch as the ordinary methods—viz., antitoxin, chloral, and bromide—are far from satisfactory, and though my cases are only three in number yet the immediate result was so striking that I feel encouraged to send them for publication.

CASE 1.—The patient was an Egyptian fellah who had had masseter spasm for 12 days before admission to the Kasr-el-Aini Hospital, Cairo. He was treated vigorously with antitoxin for the first two days in hospital, but as his condition seemed to me to get worse I on purely empirical grounds bled him 15 ounces and infused two kilogrammes of normal saline solution containing 75 grammes of brandy under complete surgical anæsthesia. Before his recovery from anæsthesia I gave him a dose of antitoxin and injected half a grain of morphine subcutaneously. After very profuse sweating he slept quietly and when I saw him next day had only very slight spasm of the masseters, which disappeared in a few days.

CASE 2.—This was a case of acute tetanus following on a tramway accident in which the patient lost both legs in the neighbourhood of the knees. About a week after admission to hospital tetanic spasms came on and when these had lasted five days and the patient's condition was very serious I heard of the case and with the permission of Mr. F. C. Madden, to whom I am indebted for this case, I infused him, bled him, and injected serum and morphine as in Case 1. This was followed by sleep for eight hours and complete cessation of spasm until about 4 A.M. next morning, that is, 16 hours in all. Spasm, however, returned with great rapidity and so I infused him again with the same result, but death ensued 24 hours later. This case was rather a severe test, as the man was quite young and very poorly nourished and was recovering from a very severe accident. The origin in this case was thought to be in a stitch which suppurated for a few days and then healed under treatment.

CASE 3.—This case was very similar to the first one and, as in that case, there was no history of wound. This absence of history is not to be wondered at as the fellaheen, for the most part, do not know their own ages and have practically no powers of memory or observation. Seven days of increasing spasm was the history obtained and shortly after admission to hospital I infused him with two kilogrammes of saline solution and 75 grammes of brandy and gave him the same injections as in the other cases. With the exception of very slight masseter spasm next day there was no return of symptoms and the patient was discharged after a short stay in hospital quite well.

Though not claiming that this treatment is a certain cure, the record of the above cases shows that it undoubtedly exercises a profound influence on the condition of spasm, and if added to the treatment of tetanus recommended in THE LANCET of August 6th, 1904, p. 386, will, I hope, help to reduce the present very heavy mortality that is quoted by the authorities.

Hony Bimbashi.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.

A CASE OF TRAUMATIC TETANUS WHICH RECOVERED UNDER TREATMENT BY HYPODERMIC INJECTIONS OF CURARE.

(Under the care of Mr. W. J. SYMES.)

FOR the notes of the case we are indebted to Dr. J. H. Connolly, house surgeon, and Dr. W. B. Cullen, assistant house surgeon.

On June 12th, 1904, a youth, aged 16 years, was admitted to the Chesterfield and North Derbyshire Hospital, with the history of having had his right leg crushed by the wheel of a wagon while at work in a coal-pit on June 3rd, causing a superficial ragged wound, about two by one and a half inches, in the popliteal space. He was taken home and seen the same evening by Mr. J. A. Magee of Clowne, near Chesterfield, who dressed the wound which progressed satisfactorily until the 10th when the patient was seized with spasm of the muscles of the neck and jaw, followed by difficulty in swallowing. A diagnosis of tetanus was made and Mr. Magee gave two injections of antitetanic serum, ten cubic centimetres each, before sending him to the hospital on the 12th.

On admission at 2 P.M. there was found marked rigidity of the muscles of the jaw, neck, and abdomen. He was unable to separate the teeth, risus sardonicus was present to some extent, and he was sweating profusely. The temperature was 99·8° F., the pulse was 88, and the respirations were 32. He was put to bed, ten cubic centimetres of antitetanic serum were injected subcutaneously at 4.30 P.M. the same evening, the wound was thoroughly cleansed, and a carbolic compress, 1 in 40, was applied and changed every

four hours. He continued much the same till June 14th, when he had a tetanic convulsion at 4.45 P.M. and ten cubic centimetres of serum were injected at 6.30 P.M., to be followed at 8 P.M. by another attack. The spasms were controlled by chloroform. Between midnight on the 14th and 5 A.M. on the 15th, at intervals of rather less than an hour, the patient had seven very severe tetanic seizures, in some cases with opisthotonos, during which respiration was seriously interfered with, and chloroform was freely administered, artificial respiration being resorted to during the worst attacks. Bromide and chloral given per rectum produced no apparent benefit.

Any attempt to feed the patient or to touch him at this period brought on a spasm and he was therefore left as quiet as possible till at 5.15 P.M., June 15th, on trying to pass a nasal tube for feeding purposes, another violent convulsion was induced. He was again anæsthetised and 30 grains of chloral hydrate were passed by the stomach tube. This was retained and the patient slept quietly for several hours. He felt better on waking and was able to take liquid nourishment by the mouth but was unable to separate the jaws. He continued to be more comfortable until 2 P.M. on the 16th, when he had a slight spasm from turning himself in bed. He was given 15 grains of chloral hydrate by the mouth and was quiet again till 1 A.M. on the 17th, when he had another slight spasm for which a similar dose was administered. The highest temperature recorded was on the 15th when it reached 101·6° F. at 2 P.M. The pulse was 104. The patient sweated profusely during the attacks and thirst was extremely marked. The wound was now dressed with a strong solution of sanitas in the hope of inhibiting the development of fresh organisms.

On June 19th it was decided to try curare and at 6 P.M. one-twelfth of a grain was given subcutaneously. He had a spasm at 1 A.M. on the 20th, for which a further one-twelfth of a grain was injected at 1.20 A.M., after which he remained free till 8.45 A.M., when another seizure took place for which he was given 20 grains of chloral hydrate at 8.55 A.M. At 4.40 P.M. a fresh attack came on and curare, one-sixth of a grain, was injected at 5.40 P.M. He had a slight spasm at 8.30 P.M. and again at 8.45 P.M. 30 grains of chloral hydrate were given by the stomach tube under chloroform. At 9.15 P.M. ten cubic centimetres of serum were injected, but another sharp spasm came on at 11.15 P.M., followed by slight attacks at intervals of about two hours, until at 5 P.M. on the 21st he had a very severe convulsion, which as usual was controlled by chloroform. A similar event occurred at 1.10 A.M. on the 22nd and one-third of a grain of curare was injected at 1.15 A.M. Except for the constant state of rigidity of the muscles he was now fairly comfortable. Slight spasms manifested themselves at 4.40 and 4.50 P.M. on the 22nd and at 6.5 P.M. he was given half a grain of curare. At 10.20 P.M. 30 grains of chloral hydrate were administered by the stomach tube under chloroform to induce sleep and at 1.35 A.M. on the 23rd two-thirds of a grain of curare were injected. The patient felt better after this, the jaws could be separated slightly, and he was free from spasms, but as a precautionary measure five-sixths of a grain of curare were injected at 1.15 A.M. on June 24th with steady improvement and the same night at 8.20 one grain of curare was given. The temperature this day was 100·4°, the pulse was 120, and the respirations were 54. The teeth could now be separated fully a quarter of an inch and in order to see whether any change would occur the curare was discontinued. June 25th passed uneventfully, but at 6.30 P.M. on the 26th another severe convulsion made its appearance, with close apposition of the teeth once more. At 6.45 P.M. one grain of curare was injected and the same dose was repeated at 1.35 A.M. on the 27th without recurrence of spasm. The jaws could again be separated as before and accordingly curare was continued once every 24 hours in increasing doses up to two and a half grains at 1.30 A.M. on July 1st, when very marked improvement set in. From this date a daily administration of one grain of curare was kept up until the 9th, when he was able to use his jaws to masticate food, and then half a grain till the 20th, with steady reduction in the tonicity of the muscles. Active treatment was discontinued after July 20th, he developed an excellent appetite, and put on flesh rapidly. The patient was placed out-of-doors on June 27th in a recumbent position to have the advantage of the bright sunshine and daily afterwards when weather permitted. A month after the onset of tetanus he was able to walk about and on August 13th he left the hospital quite well.

Remarks by Dr. CONNOLLY and Dr. CULLEN.—The case presents some features of interest, viz.—(*a*) Incubation period (seven days). Some recent statistics have placed the mortality at 96 per cent. in cases where tetanus manifests itself under ten days after injury. (*b*) Number of spasms: 16 severe and 14 less severe, 30 altogether. (*c*) Marked improvement under treatment with curare and recurrence of the spasms when it was stopped during the active stage of the disease. In all 26¾ grains of curare were given hypodermically. No ill effects on the heart were observed and the patient said that he felt more comfortable and could breathe more easily after the injections.

Mr. W. J. Symes, under whose care the patient was admitted, has kindly permitted us to record these notes.

WEST CORNWALL MINERS' AND WOMEN'S HOSPITAL, REDRUTH.

CASES OF ABDOMINAL SECTION PERFORMED FOR INTUSSUSCEPTION AND PERFORATING GASTRIC ULCER.

(Under the care of Dr. JOHN H. TONKING.)

IN these cases, which were three in number, one patient suffered from intussusception and the other two from perforating gastric ulcer. The case of intussusception terminated fatally; of the other two patients one recovered and the other succumbed on the eleventh day after an operation for subphrenic abscess. Including these, three operations for perforation, all performed by Dr. Tonking, have taken place at this hospital during the last 12 months.

CASE 1.—The patient was a man, about 40 years of age, who was seized with acute abdominal pain on Jan. 18th. There was great tenderness equally in the appendicular region and in the epigastrium and hot opium fomentations were applied at 1 P.M. At 6 P.M., as no relief was felt, a consultation was held with Dr. Frank Hichens of Redruth, when perforation was diagnosed, and as the man's wife admitted having had considerable difficulty with regard to his food the perforation was considered to be probably in the wall of the stomach, although there was marked appendicular tenderness. The liver dulness was normal and there was no vomiting; the abdomen was absolutely rigid and typical facies was present. At 9 P.M. ether was administered by Dr. William Blackwood and assisted by Dr. Hichens Dr. Tonking opened the abdomen. Gas immediately escaped and a perforation was found at the pyloric end of the stomach close to the lesser curvature. The abdomen was swabbed but no irrigation was used as there was no extravasation. The position rendered tucking in difficult, and partly by turning in and partly by stitching the omentum over the perforation was closed by a double layer of fine silk sutures. A drainage-tube with a gauze wick leading to the perforation was placed in the wound after swabbing the parts dry without irrigation and the wound was closed. The usual rectal feeding was employed for five days with the addition of strychnine when required. The temperature, however, did not come down but remained between 100° and 101° F. for a week when dulness was discovered at the right base. This increased and on the tenth day, after exploring with a needle in the ninth interspace, pus was let out by excising a portion of the tenth rib. The temperature still did not come down and the patient died on the next day. There were no stomach symptoms and the abdominal wound had practically healed.

CASE 2.—The patient was a youth, aged 19 years. He was staying in Camborne for Easter Monday and after dinner was walking in the town when he was seized with agonising pain in the abdomen for which each of his friends suggested a different variety of spirit. After taking whisky, brandy, rum, and gin without relief he was put into a cab, in the bottom of which he lay doubled up, and was in this way taken home. Dr. Tonking was informed that he had suffered for months from distress an hour or more after meals. The abdomen was board-like. There was repeated vomiting of material having a spirituous odour. The liver dulness was normal. The patient was removed to the hospital and after arrival there the liver dulness was found to have disappeared. At 8 P.M.—namely, five hours after the attack—ether was administered by Dr. Blackwood and Dr. Tonking, assisted by Dr. Hichens, opened the abdomen. There was an immediate escape of gas and a small perforation of the size of a pea, which was found near the pylorus at the lesser curvature, was tucked in

and fixed by two rows of silk sutures. The temperature at the time of the operation was 100° F.; on the next day it was 102°; and on the third day it was 99°, falling gradually to normal by the sixth day. Rectal feeding was employed, together with strychnine given hypodermically. On the fifth day gradually increasing quantities of food began to be given. The drainage-tube was removed on this day and recovery was uneventful. Calomel was given on the fourth day. After one month of milk, plasmon jelly, and similar diet solid food was gradually given. The patient left the hospital after six weeks with no gastric symptoms.

CASE 3.—The patient was aged 11 months and was seized on May 18th with pain in the abdomen like colic. The child was nursed by the mother and a little Mellin's food was given as well. The patient was seen by a medical colleague and the condition was treated by him as colic. On the third day, during the absence of this practitioner, Dr. Tonking was called in and found a child who for three days had been suffering from paroxysmal pain and for the last 24 hours there had been a blood-stained mucoid anal discharge. Per anum a tumour could be felt, the contour of which was suggestive of the cervix uteri. No abdominal tumour could be felt: the abdomen was distended. On the same day (May 21st) the child was admitted into the hospital where ether (Rendle's mask) was administered by Dr. Blackwood and the case was examined with the assistance of Dr. Hichens. No tumour could be felt, a circumstance which was attributed partly to the child being fat and well nourished and partly to the abdominal distension. The abdomen was opened in the middle line and as it was found impossible to deal with the intussusception a cross cut was made towards the left side. After this the intussusception was readily reduced; in fact, on the least pressure it ran up the intestine like a mouse creeping on until within the last six inches, after which every effort (even pressure to partial rupture of the peritoneal coat) failed to reduce it. As reduction was impossible the cæcum was incised and its contents were found to be black and gangrenous. The gangrenous portion was excised, the intention being to suture the ingoing layer to the returning layer (Barker's operation). The child, however, succumbed to the operation owing to the length of time involved and to the unfortunate delay in recognising the condition. The intussusception was of the ileo-cæcal variety, the apex being the ileo-cæcal valve.

Remarks by Dr. TONKING.—The last case shows the ease of reduction of an intussusception up to a certain point and the uselessness of water or air injection to deal with the last few inches in an intussusception if there is any marked swelling. It likewise demonstrates the ease of reduction if such cases are recognised at once.

Reviews and Notices of Books.

The Examination of Waters and Water-Supplies. By JOHN C. THRESH, D.Sc. Lond., M.D. Vict., D.P.H. Cantab. London: J. & A. Churchill. 1904. Pp. 460. Price 14*s*

THE value of chemical and bacteriological analysis respectively in regard to the determination of the purity of water-supplies has been doubted by various observers from time to time. The first opponents to bacteriological analysis were generally the old school of analytical chemists who pinned their faith to chemical methods. On the other hand, not a few bacteriologists at one time looked upon the chemical analysis of potable waters as without value. The fact is that both chemical and bacteriological methods have their discrepancies and this view has now come to be shared by all concerned. There are instances in which it has been known that slight contamination of a water has taken place and yet chemical analysis has given practically negative results, while organisms of the colon series were readily detected by bacteriological methods. Owing to the splendid investigation that has been directed to the isolation and recognition of the flora of sewage it would seem that the detection of pollution so slight as 1 part per 1,000,000 can be effected by bacteriological means. On the other hand, if a considerable time has elapsed since the pollution took place the recognition of impurity by bacteriological processes becomes uncertain. The same applies to chemical analyses, though in this instance, in spite of purifying influences at work, the products of combustion, so to speak, may be found. Thus nitrogen previously existing in organic matter and ammonia may be ultimately present as nitrate. In surface water it is certain that ammonia and nitrites are scarcely ever present to any extent without sewage contamination. Valuable as may be the indications given in a carefully conducted chemical analysis, one very important fact must ever stand out in favour of bacteriological examination and that is that in the case of filtered supplies the purifying work of the filter-bed is essentially bacteriological and therefore the efficiency of the filter-bed can only be controlled by instituting bacteriological analyses of the effluent. Dr. Thresh has had the advantage of considerable practical experience with both methods of analysis and in his book on the subject he sees no reason for abandoning chemical methods. "In recent years," he says, "bacteriology has come to the aid of chemistry, and there is now a general opinion that a bacteriological examination is more important than a chemical analysis. This is undoubtedly true in some cases but not in all. A properly made bacteriological examination may often afford indications of pollution which no chemical analysis could possibly detect, but I am afraid that the inferences drawn from the results of many so-called bacteriological examinations are often as fallacious as those derived from the results of chemical analyses. When we find that waters used for long periods by large communities are condemned by bacteriologists as being dangerously polluted, and that the results obtained from the same water by different bacteriologists differ to an extent which is impossible in a chemical analysis, our faith in bacteriological examination is somewhat shaken. In any case a proper bacteriological examination is far more tedious and more troublesome to perform than a chemical analysis, and the results are even more difficult to correctly interpret." He very properly, however, emphasises the importance of making a microscopical and biological examination of suspended matter in drinking water for "very often such an examination reveals more quickly and certainly the character of a water and some defects in its source than either a chemical or bacteriological analysis. In several instances such an examination has led to the discovery of sources of pollution which had been overlooked at a careful inspection."

Dr. Thresh's remarks upon the importance of making careful inspection of the source of supply should be very carefully considered by those engaged in analysis. Often the examination of the source of supply has given him far more important information than could be obtained from the analytical results. The examination of the source in numerous instances in which the supplies were the cause of outbreaks of disease was the means of affording information without which the chemical, bacteriological, or microscopical examination of the water "could not have been correctly interpreted." Part I. of his book, since it deals with the examination of the sources from which the water is derived, is therefore of the greatest importance. In Part II. the various methods of examining water and the interpretation of the results are very thoroughly considered and in Part III. the analytical process and methods of examination are set forth in practical detail. The chapter on Bacteriological Examination of Water will serve as an eminently practical guide to the bacteriologist. Dr. Thresh has wisely kept within the limits of the application of bacteriology to the differentiation of pure from polluted waters and points out concisely and clearly the lines upon which it is safe to proceed. In choosing this course he is supported by the evidence

of his own experience—an experience which will be of the greatest value to those engaged in the protection of the public health by means of bacteriological safeguards. In some notes at the end of the book the Hon. R. S. Strutt's method for the detection of radium in waters is outlined, while an interesting instance of the value of systematic examination of public supplies is quoted.

Dr. Thresh has made many important contributions to the subject of the protection, control, and pollution of water-supplies as well as to the various methods in use for detecting contamination. The present work in our opinion is by no means the least valuable of these contributions, comprising as it does the results of his long experience fortified by careful consideration and sound judgment.

Gynæcology. By WILLIAM R. PRYOR, M.D. 163 Illustrations in the text. New York: D. Appleton and Co. 1903. 8vo, pp. 380. Price 15*s.* net.

THE important part played by surgery in gynæcological treatment at the present day is well illustrated by this book. Although the author tells us in his preface that a noticeable feature in the work is the prominence given to non-operative as compared with operative treatment, yet we find no less than 14 of the 22 chapters given up to the description of various operative procedures while only eight are devoted to a description of gynæcological diseases and from these bacteriology and minute anatomy have been purposely omitted. We indeed must regard the work as essentially surgical in character. In the etiology of the various inflammatory conditions of the genital tract the author lays great stress upon the rôle played by the gonococcus. He does not think that gonorrhœal endometritis ever exists without disease of the adnexa also being present and as such cases are seldom seen before invasion of the tubes they usually require treatment as cases of salpingitis. In such cases active treatment is indicated. Dr. Pryor states that the occurrence of a pyosalpinx never follows the practice of posterior vaginal section and curettage, while he maintains that expectant treatment encourages the formation of pus. In the section devoted to puerperal septic endometritis an equally energetic form of treatment is advocated. The method employed is based upon the destructive action of iodine upon cocci of all kinds. The uterus is curetted and packed with 10 per cent. iodoform gauze so as to allow the iodine to penetrate to all parts of its walls. At the same time Douglas's pouch is opened and packed with 5 per cent. iodoform gauze up to the level of the fundus uteri. This is best done with the patient in what is known as Pryor's position, in which she is placed in the lithotomy position and the head of the table lowered to an angle of 45°. The intra-uterine packing is removed and renewed in three days, to be finally removed in three days more. The *cul-de-sac* packing is renewed in a week and every five days thereafter until the opening closes. By the disintegration of the iodoform free iodine is liberated and is rapidly absorbed by the uterus and the peritoneum, evidence of iodine in the urine being obtained in a few hours. No case in the author's practice not operated upon previously has died and a number of the women have subsequently borne children. In view of these results Dr. Pryor thinks that vaginal and abdominal hysterectomy are positively contraindicated in cases of this kind.

There is a tendency throughout the book to exaggerate the remote results of various local conditions. For example, we are told that cystic degeneration of the cervix is likely to be followed by hysterical symptoms, whilst amongst the symptoms of subinvolution of the uterus we find enumerated a peculiar train of nervous phenomena, periods of excitation followed by melancholia, and in some cases even suicidal tendencies. The occurrence of these conditions will hardly be considered by English readers as at all a likely sequela of such relatively common pathological states.

In discussing the causes of dysmenorrhœa associated with anteflexion of the uterus Dr. Pryor says that normally softening of the endometrium as the result of the multiplication of its lymphoid elements accompanies the process of menstruation. In these abnormal cases few lymphoid elements are present, such softening does not occur, and as a result pain is produced. In accordance with this theory the author attempts to modify favourably the life of the individual. If general treatment does not succeed then curettage, bilateral incision, and dilatation of the cervix should be practised. In considering the treatment of retro-displacements it is interesting to note that Dr. Pryor says that there is too great a tendency in the profession to perform operations for such displacements without employing less severe methods first, yet on the very next page it is stated that fixed retro-disposition of the uterus always calls for an intraperitoneal operation. In the section on ectopic gestation we find it stated that there are two conditions under which it is permissible to pursue an expectant treatment—viz., when the pregnancy is interstitial and there is a sufficient amount of tissue to prevent rupture and a possibility of the sac evolving towards the uterine cavity, and in abdominal pregnancies when the fœtus is alive operation may be postponed until a living child can be extracted. It is a little difficult to see how the amount of tissue in the wall of an interstitial gestation is to be gauged with safety.

The second part of the book is much better than the first. In it is contained a very good account of the various gynæcological operations. The great stress laid upon the method of performing many of the operations by the vagina is noteworthy. The author practises posterior vaginal section under a variety of different conditions and the success which attends this procedure in his hands shows what can be done by this route by a bold and skilful surgeon. The descriptions of the various operative measures are good and well-illustrated and will repay perusal. While we cannot agree with many of the author's pathological theories the description of his surgical technique is certainly in many respects original and noteworthy. For this reason the book is worth reading.

National Physical Training. Edited by J. B. ATKINS. London: Isbister and Co. 1904. Pp. 238. Price 2*s.* 6*d.*

THIS little volume is virtually a reprint of a series of letters and articles which have appeared in the *Manchester Guardian*, a journal which it will be remembered opened its columns to a discussion on the subject of physical education. The whole correspondence has been edited by Mr. J. B. Atkins who also gives a general summary of the discussion in a very lucid chapter at the end of the book. The individual contributions to this open debate include articles by many experts on physical training, by politicians, and by others whose interest in the subject is from the sociological side; in fact, there is no aspect of the subject, except one to which we shall presently allude, which has not been ably considered by one or other of the many correspondents whose writings provide material for 23 chapters. Mr. John Burns, M.P., enlarges on the primary importance of better conditions of life; a wise system of physical training is described by Sir Lauder Brunton; Dr. A. Newsholme challenges the hypothesis that there is any deterioration in the national physique; and Mr. Eustace Miles gives suggestions for a system of physical training. These, together with the chapter from Mr. Atkins, constitute the more important contributions to this excellent little volume. Most of the articles, with the notable

exception of that from the pen of Dr. Newsholme, premise the physical deterioration of the race as a point of departure for their arguments—a postulate which in the light of the recent report of the Committee of the Privy Council loses considerably in cogency. However, the whole question of physical deterioration and physical training is a large one and cannot be disposed of by the findings of one or perhaps of many commissions. Indeed, there is plenty of work for the proposed Physical Improvement League—with regard to which Mr. Atkins includes in his appendix a draft scheme for consideration. The tendency at the present day, as indeed is shown by the writings of the many representative contributions to this collection of essays, is to suggest artificial means for checking the supposed general downward trend of the national physique. In fact, as we have already mentioned, the postulate of physical degeneration has been too readily assumed. According to the manner in which the subject is viewed, the undoubted changes in the national physique, which have made their appearance synchronously with the progress of civilisation, may be regarded as evidences of degeneration, or perhaps more correctly and more scientifically as indications of an inevitable evolution; in fact, as evidences of the biological stages which mark the progressive adaptation of the individual to his environment, and with these it may be dangerous to interfere. It may, indeed, be not altogether unreasonable to suppose that the problem of the future will be to economise physical development to the limits required for the carrying on of simply an intellectual existence, and if this be true it is a mere anachronism to attempt by many of the means which are suggested in Mr. Atkins's compilation to regenerate our physical condition according to the ideals and standards of the pre-mechanical and pre-steam days. This very important side of the question seldom receives the attention which it deserves and in Mr. Atkins's book we notice the usual omission. Nevertheless, we heartily commend this little volume to the notice of all those interested in the question of physical training.

A Handbook of Ophthalmic Science and Practice. By HENRY E. JULER, F.R.C.S. Eng., Ophthalmic Surgeon to St. Mary's Hospital. With illustrations. Third edition, revised and enlarged. London: Smith, Elder, and Co. 1904. 8vo, pp. 733. Price 21*s*.

Mr. Juler's "Handbook" occupies a commanding position amongst the numerous treatises on ophthalmology that have appeared during the last few years, not only in this country but in America and on the continent. It is indeed a very well-written volume and is a creditable outcome of the practice of the Royal Westminster Ophthalmic Hospital. In this hospital Mr. Juler was surgeon for many years and had there the opportunity of seeing all that was rare and interesting amongst the new cases which presented themselves in a *clientèle* of 10,000 per annum, and since he has steadily attended to his duties it is not surprising that he is able to speak with authority upon the greater number of the diseases of the eye. The teaching given in every text-book must be almost necessarily dogmatic and it is better that the master should state distinctly what he believes to be correct in regard to the symptoms, causes, and treatment of disease than that he should leave the student to balance the different views that have been advanced without any expression of opinion to guide him. Truth, says Lord Bacon, is more easily educed from error than from confusion, and that apothegm should ever be borne in mind by the teacher. To give an example, it is common knowledge that the moist conjunctiva causes many micro-organisms that are floating in the air, for the most part dead, to adhere to its surface and hence various forms of streptococci, staphylococci, and pneumococci can easily be demonstrated in the fluid of the conjunctival sac and it is to these that the condition known as acute catarrhal conjunctivitis has been attributed. Mr. Juler states that he has on several occasions found a very small bacillus, smaller than the xerosis bacillus, readily staining with methylene blue, but not with Gram's fluid, and occurring in clusters in the cells and intracellular fluid and exhibiting a slight central constriction. This bacillus he regards as the active agent. He believes it to be identical with the small bacillus described by Weeks, Morax, Stephenson, and others. The frequency with which catarrhal conjunctivitis appears in schools and the very serious inconvenience which arises from an outbreak in a numerously attended school render it requisite that its occurrence should be quickly recognised and promptly met and very useful and proper directions are given in regard to the treatment that should be pursued. It is clear that even if this particular bacillus be not the only cause of acute catarrhal conjunctivitis, yet that the author has done his duty in calling the attention of the student to its presence and leading him to examine the secretion for himself. Considerable additions have been made to the section on the Diseases of the Conjunctiva, bringing it well up to date. The same may be said of the section on the Cornea in which the indications for enucleation or one of its substitutes as formulated by the special committee of the Ophthalmological Society of the United Kingdom are given. In speaking of the treatment of phlyctenular keratitis the author might with advantage have mentioned the not infrequent association of that disease with ascarides and lumbrici and also with caries of the teeth.

It is a matter of regret that some more appropriate expression than "retrobulbar neuritis" cannot be discovered. The term is applied to conditions associated with very different circumstances. In some of these it is not certain than an inflammatory process is really present and there can be little doubt that the pathology must differ considering the extraordinary number of causes to which the symptoms associated under the term "retrobulbar neuritis" have been attributed. Mr. Juler dismisses one group summarily under the head of toxins, but this includes not only tobacco and alcohol, which are the most commonly observed causes, but agents so dissimilar in their action on the economy as ergot and strychnia, cannabis indica, oil of male fern, lead, arsenic, and mercury. The subject would well repay thorough investigation and might serve as the basis of a thesis.

The chapter on Injuries of the Eyeball and its Appendages seems to be rather brief but the author gives the mode of employing the Roentgen rays and Haab's giant magnet, whilst many forms of injury are dealt with under previous sections. The author discusses the vexed question of the removal of the lens in high degrees of myopia, the limits given being 14 dioptres for an adult and ten dioptres for a child, but whilst admitting that good results may follow the operation he enumerates so many dangers, near and remote, that we fancy few, unless very experienced operators, will venture to recommend this proceeding to their patients.

The drawings in the body of the work are numerous and well executed. The chromolithographic plates, which are 17 in number, though a little coarse as compared with the best continental ones, give good representations of the chief forms of retinal and choroidal disease. In an appendix the author has obtained the assistance of Mr. George S. Keeling who supplies eight plates containing many drawings illustrative of the normal and pathological histology of the eye. These will be found serviceable by the student. There is a glossary giving the etymology of the chief terms used in ophthalmology and there is an excellent index. The treatise as a whole is a very satisfactory and solid piece of work and we can strongly recommend it to all those who are beginning the study of the eye in earnest as an efficient and trustworthy guide.

LIBRARY TABLE.

Manual of Midwifery. By W. E. FOTHERGILL, M.A., B.Sc., M.D. Edin. With double Coloured Plate and 86 Illustrations in the text. Third edition. Edinburgh: W. F. Clay. 1903. Crown 8vo. Pp. 506. Price 9*s.* net.—Dr. Fothergill has succeeded in revising this edition of his book on midwifery without increasing its bulk, so that it retains its former convenient size. The chief alterations are to be found in the description of the development of the membranes and placenta in which the work of Spee and Peters is included. The whole of this chapter has been rewritten and it now contains a very good account of the development of the early ovum, illustrated by numerous drawings, mainly taken from Whitridge Williams's book on "Obstetrics." Besides this we note that a short description of chorion-epithelioma has been added and the author brings forward his view that "the function of the decidual cells is to destroy chorionic epithelium when the latter unduly invades the maternal tissues in contact with the ovum." The ovum is a parasite whose external cells exercise a phagocytic action upon the superficial portion of the decidua. But the decidua resists invasion by producing the decidual cells, which in their turn have a phagocytic action upon the chorionic epithelium. Failure on the part of the decidual cells to exercise this function may be supposed to allow of the admission of fragments of living chorionic epithelium into the maternal tissues. Dr. Fothergill does not approve of Bossi's dilator; when the cervix is softened dilatation by the finger is, he says, easy, and when the cervix is unsoftened Bossi's dilator is slower, more uncertain, and probably more unsafe than the use of multiple incisions. We cannot agree with him in these views. It is a pity that he should perpetuate the use of the inaccurate term "hydatid mole." There is no reference in the index to deciduoma malignum and the binding of the book leaves much to be desired. As we have said of former editions, however, the manual is a good one, clearly and well written, and we can recommend it to students.

On the Classification and Pathology of Beri-beri. By HAMILTON WRIGHT, M.D. McGill. London: John Bale, Sons, and Danielsson, Limited. 1903. Pp. 74. Price 3*s.* 6*d.* net.—The author of this work first devotes a page to a recapitulation of his previous papers on the subject, in which he endeavoured to show that the incubation period of the disease is short—from seven to 14 days; that it is an acute or subacute infectious disease due to a specific organism not yet certainly determined; that the organism is not one whose special habitat is any food such as fish or rice but one that may, nevertheless, be ingested in any food and drink accidentally contaminated; that the organism multiplies in the contents of the stomach and small gut; and that it there elaborates a toxin which, being absorbed, poisons certain neurons and thus gives rise to a group of symptoms which can be classified. In the book now under notice the author discusses more fully the classification and pathology of beri-beri. He endeavours to make it clear that there is not only clinical evidence but also indisputable post-mortem evidence that beri-beri must be regarded as an acute infectious disease having a definite primary lesion. He proposes the following classification: (1) acute pernicious beri-beri, in which the onset is sudden, with more or less severe symptoms of gastro-duodenal irritation and cardiac paralysis; (2) acute beri-beri, in which the onset is sudden, though never so sudden as in acute pernicious beri-beri, with more or less noticeable symptoms of gastro-duodenal irritation and concomitant vaso-motor and sensori-motor paresis; (3) subacute beri-beri, in which the onset of the disease is more insidious, in which the gastro-duodenal irritation may escape notice and in which the paresis may be so slight as to involve only one or two movements, a few areas of sensation and the vascular supply to the front of the legs; and (4) beri-beri residual paralysis or neuritis, or the disease as it appears after the symptoms of gastro-duodenal irritation have disappeared and after the causal organism and its toxin have accomplished their work and have been eliminated. A report of observations made both clinically and post mortem in each of these classes of cases of beri-beri follows and 17 cases are given in clinical and pathological detail in support of the classification. The book is illustrated by three plates (two coloured); there is also a useful table of references. The author draws attention to the fact that the mode of action of the causal organism of beri-beri presents some analogy to that of diphtheria.

Census of India, 1901. Vol. I. Ethnographic Appendices, being the Data upon which the Caste Chapter of the report is based. By H. H. RISLEY, I.C.S., C.I.E. Calcutta: Office of the Superintendent of Government Printing, India. 1903. Pp. 251. Price Rs.3 or 4*s.* 6*d.*—This volume contains in the form of appendices the principal data upon which the caste chapter in the first volume is based. In accordance with the order of treatment adopted in that chapter the physical evidence has been set out first. It consists of summaries of measurements and diagrammatic seriations of the data which serve to establish the types. The data are the proportions of the head, proportions of the nose, relative prominence of the root of the nose, and the stature. Appendix II. deals with the social grouping of the different tracts of country. Appendix III. consists of maps—a general map locating the main physical types and a number of small maps illustrating the distribution of the more important tribes and castes. Appendix IV., which occupies the greater part of the volume, comprises a number of accounts, derived from various sources, of some typical tribes and castes of the various ethnic regions. The selection has been made with the object of covering as much ground as possible and giving within a moderate space, yet in fairly full detail, a description of some of the chief constituent elements of the population of India. The last appendix, No. V., deals at length with the "Modern Theories of Caste." It is by Mr. J. C. Nesfield, Sir Denzil Ibbetson, K.C.S.I., and M. Emile Senart. The theories of these observers have already been referred to in the main chapter. Sir Denzil Ibbetson gives at some length what seems to him the fundamental ideas upon which caste is based. His theories have already appeared in the census report of the Punjab for 1881. The whole volume is an interesting one and will repay the student of ethnology for the time expended in its study.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXXI., No. 5. London: C. J. Clay and Sons. August 22nd, 1904. Price 8*s.*—The articles contained in this number are as follows: 1. The Influence of Changes in the Intraocular Circulation on the Intraocular Pressure, by E. E. Henderson, F.R.C.S. Eng., and E. H. Starling, F.R.S., with nine figures in the text. The authors show that the intraocular pressure in cats and dogs, which were the animals experimented on, is a function of the blood pressure in the ocular blood-vessels and varies directly with this. Stimulation of the cervical portion of the sympathetic causes first a rise and then a fall of intraocular pressure, the former effect being due to contraction of the orbital unstriated muscle, the latter to contraction of the intraocular blood-vessels. Stimulation of the peripheral end of the divided fifth nerve root causes a rise of pressure due to contraction of the

orbital unstriated muscle; this effect was absent after extirpation of the superior cervical ganglion and degeneration of the fibres passing from it to the Gasserian ganglion. There is no evidence of the presence of vasodilator fibres either in the fifth or in the sympathetic nerves. The effects of adrenalin and nicotin on the eye vary with the preponderance of local or general effects on the blood-vessels. 2. The Influence of Fasting and Feeding upon the Respiratory and Nitrogenous Exchange, by M. S. Pembrey, M.D. Oxon., and E. I. Spriggs, M.D. Lond. This article gives the results of numerous experiments on the metabolism of the body in rats during successive periods of fasting and feeding. 3. The Protective Value of Proteids and their Decomposition Products on Trypsin, by H. M. Vernon, M.D. Oxon. The method employed was to expose a known percentage of the substance for one hour at 38°C. to pancreatic extract with 0·4 per cent. of sodium carbonate and then to determine the amount of trypsin destroyed. Dr. Vernon finds that when no proteid is present 56 per cent. of the ferment is destroyed, but only 7 per cent. in presence of 4 per cent. of proteid. 4. On the Action of Oxygen at Low and High Pressure upon the Corneal Endothelium, by G. Bullot, assistant in physiology at the University of California, with eight figures in the text. The figures show the curious differences which result in the vitality of the endothelium after enucleation and scraping off the epithelium from the cornea, loss of vitality commencing at the periphery and proceeding towards the centre with low pressures and in the opposite direction with high pressures. 5. The Union of Different Kinds of Nerve Fibres, by J. N. Langley, F.R.S., and H. K. Anderson, M.D. Cantab. 6. The Elasticity of Animal Tissues, by J. B. Haycraft, M.D., with 23 figures in the text. Dr. Haycraft finds that all of the simple tissues of the body follow Hooke's law when they are stretched within physiological limits. The relaxing appears to vary and Hooke's law is not always observed. 7. On the "Sham Death" Reflex in Spiders, by T. Brailsford Robertson, with one figure in the text. Mr. Robertson finds that with the nervous system intact "sham death" is a complete tetanus and is not due to the conscious volition of the animal, but is a reaction necessarily consequent on the structure of its nervous system. In some species it can be carried out by the thoracic segments alone, in others the head ganglia require to be intact. 8. On Autogenetic Regeneration in the Nerves of the Limbs, by J. N. Langley, F.R.S., and H. K. Anderson, M.D. Cantab. The experiments of these observers, so far as they go, are decidedly in opposition to the autogenetic theory. This number of the journal also contains the Proceedings of the Physiological Society.

The Phonographic Record, September, 1904.—In this issue the lecture by Sir W. R. Gowers on Chorea and its Neuronic Aspect is concluded. The lecturer states that "if we grasp the idea that multiplicity is the equivalent of size, and that common function involves a common constitution, identical through a vast series of minute structures, and also a common liability to suffer from the same influences, much of the difficulty of conceiving chorea as a dendritic disease will disappear." Mr. Norman Porritt describes chloride of ethyl as the anæsthetic *par excellence* for minor operations and discusses a form of apparatus made by Messrs. Down Brothers at his suggestion for the administration of the drug. Dr. E. B. Gray has written a note on a variety of kidney (a single kidney of double size) found at the post-mortem examination on a woman who had been run over. Another note relates to the case of a woman, aged 63 years, who left off eating fruit and vegetables for 12 months because she had "suffered from indigestion" and at the end of that time had well-marked scurvy which was cured by five weeks' remedial feeding in hospital.

New Inventions.

A NEW INHALER FOR ETHYL CHLORIDE.

THE accompanying illustration shows a modified form of wide bore ethyl chloride inhaler. As there is no lint in the face-piece the patient's face can be seen throughout the administration. The neck of the bag fits over that of the face-piece and can be freely rotated about it. Corresponding openings are made in the inner and outer necks and when these coincide the anæsthetic can be sprayed through them into the bag. Within the neck of the face-piece is a bit of lint fixed (opposite the aperture) by a clip so as to form a pocket which is open towards the bag; just as an aortic valve forms a pocket open towards the aorta. The

lint minimises reflux of the spray into the face-piece and economises the anæsthetic. When a gag is used the inhaler can be applied *uncharged* the moment the gag is adjusted and then can be charged during a convenient expiration. After a breath or two the air-way is closed by slightly rotating the neck of the bag. This inhaler is especially useful in dealing with the large numbers of children met with in hospital practice, as about 18 cases of adenoids and tonsils can be operated upon per hour when anæsthetised as described. The inhaler is made by Messrs. Allen and Hanburys, with one face-piece, for a guinea. A smaller size face-piece can be supplied, the two sufficing for all cases.

Burwood-place, W. A. BERESFORD KINGSFORD.

A NEW INGUINAL COLOTOMY BELT AND A MODIFIED HERNIA TRUSS.

A VARIETY of expedients have been adopted for securing the dressings and coverings requisite in the treatment of colotomy. Some of these are, no doubt, more successful than others and I find that an inguinal colotomy belt, which has been made at my request, fulfils all requirements. The usual indiarubber bag or pouch has been dispensed with and replaced by a wire vaccination shield affixed to a light abdominal belt, which is well shaped to grip the pelvis. The shield is lined with the ordinary green protective and can be filled with absorbent tow or wool, either carbolised or charged with charcoal, thus providing a cleaner and more efficient method of dealing with the fæces than the usual pouch. In order to prevent the belt slipping upwards and so displacing the receptacle buttons are sewn along its lower border and these fix it to tightly fitting bathing drawers or pants furnished with button holes and drawn up over the belt. In this way perineal bands are avoided and great comfort is obtained. In my earlier cases of colotomy the belt was always a trouble and my thanks are due to Messrs. James Woolley, Sons, and Co., Limited, Victoria-bridge, Manchester, for carrying out suggestions and producing a very efficient belt at a moderate cost.

The same firm have also at my suggestion made a specially soft and flat pad for hernia trusses.

HERBERT LUND, F.R.C.S. Eng.

St. John-street, Manchester.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 17, 1904.

Uncertified Mental Incapables.

WE have already referred to the fact that, to quote the official announcement, "the KING, on the recommendation of the Home Secretary, has been pleased to appoint a Royal Commission to consider the existing methods of dealing with idiots and epileptics and with imbecile, feeble-minded, or defective persons not certified under the lunacy laws; and, in view of the hardship or danger resulting to such persons and the community from insufficient provision for their care, training, and control, to report as to the amendments in the law or other measures which should be adopted in the matter, due regard being had to the expense involved in any such proposals and to the best means of securing economy therein." In an age remarkable for its spirit of inquiry and investigation and for an abounding philanthropy it is not surprising that the Home Secretary, as the public official mainly responsible for the internal well-being of the community, has at last been impressed with the total inadequacy of the provision made for dealing with the enormous class of mental incapables who, not being certified lunatics, are unfit either to earn a livelihood or to look after themselves or their affairs. Whether these weaklings are merely idle and mischievous vagrants or unsightly and unwholesome domestic burdens, liable to suffer neglect and ill-treatment, or whether they have active criminal tendencies themselves or show an aptitude for crime as tools in the hands of others, they are all more or less a public evil and a source of trouble, anxiety, and danger. They may be said to be "no good to anybody" and it is fitting that the State, standing *in loco parentis*, should, by appointing a Royal Commission on the subject, indicate its responsibility with regard to every member of the community who is, by nature or from disease, idiotic, epileptic, imbecile, feeble-minded, or defective, but not certified under the lunacy laws.

The reference under which the Commission is to act is no doubt a comprehensive one but if we understand it aright it appears to us to be framed so as to exclude the consideration of at least two groups of cases of mental disorder or defect as to the treatment and management of which the public would be glad to have a pronouncement by a Royal Commission after full inquiry. The first group consists of those cases of mental incapacity arising from incipient or oncoming insanity taken at the time when the questions of certification and protective supervision have to be decided. Evidence given before a Royal Commission would be of the utmost value when, if ever, the proposed legislation on this matter comes up for consideration in Parliament. We are willing to admit that this group does not appear to come immediately within the scope of the reference and its omission may be due to a supposed irrelevancy and to the fact that the Bill dealing with it is in the hands of the Attorney-General and his department. The other group of cases consists of the many certified lunatics in asylums who by reason of the chronicity of their disease have degenerated into simple harmless imbeciles corresponding to all intents and purposes with the uncertified imbeciles whose case is to be considered by the Commission. These men and women have accumulated in all our public asylums to such an extent that they are largely the cause of the indefinite expansion of those institutions. We think that it will scarcely be possible for the Commission so to frame its report as to exclude a *modus vivendi* other than the lunatic asylum for this class of imbecile. At all events, any provision of an economical sort made by the Commission for the imbeciles included in its reference will not unjustifiably have to be considered by asylum authorities with a view to the possible discharge of their harmless imbecile population.

The work of the Commission is comprised under two heads—viz., to consider the existing methods of dealing with uncertified mental incapables and to report as to the amendments in the law or other measures which should be adopted in the matter—and we are convinced that most useful and valuable information will be derived both from the evidence and from the report. The Commissioners will have their highest aspirations somewhat curtailed by the rider to the reference which intimates that due regard is to be had "to the expense involved in any such proposals and to the best means of securing economy therein." Their proposals will perforce lie between the Scylla of legislative enactment involving questions of personal liberty and an annual grant and the Charybdis of economy with due provision for control, maintenance, and supervision. We have no fear that, if the Commissioners are able to make out a case, the public will be otherwise than willing to ratify their recommendations in a matter in which the best and healthiest interests of the community are involved. The following is the constitution of the Commission: the Marquis of BATH (chairman), Mr. WILLIAM PATRICK BYRNE, C.B., Mr. CHARLES HOBHOUSE, M.P., Dr. FREDERICK NEEDHAM, Mr. HENRY DAVID GREENE, K.C., M.P., Mr. CHARLES EDWARD HELEY CHADWYCK-HEALEY, K.C., the Rev. HAROLD NELSON BURDEN, Mr. WILLOUGHBY HYETT DICKINSON, Mr. CHARLES STEWART LOCH, and Mrs. PINSENT. The names of the Commissioners are a guarantee that the work will be thoroughly and efficiently carried out. But in a matter so largely of medical import in the domain of mental hygiene we may be pardoned if we take the liberty of pointing out that while the terms of the reference explicitly exclude the area covered by the lunacy laws the only medical man on the Commission is Dr. NEEDHAM, the whole of whose life has been spent in the administration of those laws either as an asylum superintendent or a Commissioner in Lunacy. In view of the remarks which we have made with regard to the scope of the inquiry it will readily be understood that we look upon Dr. NEEDHAM'S appointment on the Commission as most fitting and proper, but several names occur to us, as they will to others, of men of vast medical experience, not necessarily official, among the classes under consideration any one of whom might have

been selected and appointed as a member to act with him as a professional colleague in examining the witnesses and in dealing with the evidence submitted on a subject so full of intricacy and responsibility.

Infantile Diarrhœa.

DURING the late summer and early autumn months the mortality due to gastric and intestinal affections in infants is always high and this year in certain towns the number of deaths has been unusually large. This fact has been commented on by our correspondents in Ireland and Liverpool.[1] At the meeting of the Dublin public health committee held on August 16th the death-rate for the previous week was reported to be 28·1 per 1000 and of this large mortality no less than five deaths in every 1000 were due to diarrhœa. At the meeting of the Liverpool health committee held on August 18th attention was also drawn to the prevalence of diarrhœa and the high death-rate of the city for the previous two weeks, which had reached the figure of 37·7 per 1000.

Diarrhœa is essentially a symptom dependent on various morbid causes. In infants it is most frequently the consequence of inflammation brought about by the direct irritation of the intestinal mucous membrane by improper feeding. One of the most important etiological factors concerned in this affection is undoubtedly the ignorance of the mothers. A very large number of women, more especially among the poorer classes, have not the least idea of the proper management of children and if the natural food—human milk—cannot be supplied the lot of the infant is often hard indeed. The out-patient departments devoted to the diseases of children are crowded with such cases, the unfortunate little patients either being afflicted with gastro-enteritis or practically dying from starvation. The treatment of these conditions is beset with considerable difficulties. The mothers or the custodians are firmly imbued with the idea that "a bottle of medicine" is all-powerful and will cure all infantile ailments irrespectively of dietetic irregularities and they resent any attempts at instruction as to how infants should be fed. Some authorities maintain that chilling of the surface may cause simple diarrhœa; infants when first short-coated occasionally suffer in this way. The above conditions are operative throughout the whole 12 months but the rapid alterations of temperature that so often occur during the late summer in this country are particularly likely to be followed by an extensive outbreak of diarrhœa amongst the children. Dr. EUSTACE SMITH[2] points out that rickety subjects, probably on account of the profuse perspiration to which they are liable, are especially prone to suffer from these atmospheric changes and in infants who are teething the process of dentition, as it excites a certain amount of fever, is often accompanied by a mild relaxation of the bowels. The most severe forms of diarrhœa occur during the summer heat, and some interesting observations have been made to explain this seasonal increase of intestinal irritation. The late Dr. HENRY TOMKINS, Dr. J. PRIESTLEY, and others have demonstrated that the diarrhœa death-rate follows a rise in the temperature of the earth—the hotter the summer the further will the heat penetrate into the earth. Consequently, at the end of a hot season, such as has been experienced this year, the mortality from infant diarrhœa is found to be high. Further, this disease is rarely seen out of large towns and many observers regard the affection as a contagious zymotic disease. The presence of a pathogenic organism has been frequently sought for and many forms of microbes have been isolated from the stools. Dr. V. C. VAUGHAN obtained from certain micro-organisms albuminous products which when injected under the skin of kittens caused vomiting and purging and if in sufficient quantity collapse and death. As yet, however, no special organism has been found to be invariably associated with the attacks. In all probability milk is the chief medium by which the germs find their way into the alimentary canal. Inflammatory conditions in the cow probably have a pernicious effect on the milk. During certain epidemics of acute gastro-enteritis the streptococcus longus was found in the milk supplied by cows that were suffering from mastitis. Dr. HOLST who investigated these cases states that these cocci, when injected into mice and rabbits, set up diarrhœa and when swallowed by himself caused colic and vomiting. Dr. EUSTACE SMITH observes that in the most virulent cases of infantile diarrhœa the whole course of the illness points to a septic origin, especially as the patient often dies, not merely exhausted by the drain from the bowels, but in a state of nervous collapse which may continue for many days after the character and the number of the stools have ceased to be a cause for anxiety. Another significant fact is that this septic variety of diarrhœa attacks strong subjects as well as weakly ones; indeed, a condition of sturdy health, although it may influence the issue of the illness, seems to afford little protection, if any, against its onset. On the other hand, a delicate child is more prone than a strong one to suffer from the non-septic forms of purging.

The above considerations suggest certain measures which might be adopted to prevent the very extensive occurrence of infantile diarrhœa. In the first place, careful supervision of dairies and cowsheds during the summer months should be insisted on and any case of mastitis carefully treated. It would be desirable that further investigations should be made in order to ascertain the infective nature of the milk, both boiled and unboiled, obtained from cows suffering from this affection. Liverpool has set an excellent example in establishing depôts from which parents can obtain sterilised milk and this plan has proved successful in diminishing the death-rate from diarrhœa. The most important matter, however, is to try to adopt some means by which instructions could be given to women as to the proper management of children. Unfortunately, there appears to exist much prejudice against tuition on the part of those immediately concerned. As our Liverpool correspondent points out, there are thousands of mothers who cannot suckle their children but there are also a very large number who refuse to give their infants sterilised milk. If classes could be formed at which instruction could be given in those matters, not only to the married women amongst the poorer classes but also to district nurses and visitors,

[1] THE LANCET, August 27th, pp. 642 and 643.
[2] Clifford Allbutt's System of Medicine, vol. iii., p. 747.

who might in their turn convey the necessary instructions to the mothers in their own homes, doubtless beneficial results would follow. As is well known, milk is liable to decomposition in hot weather and unless scrupulous cleanliness is observed in regard to the vessels in which the milk is kept, particularly the feeding bottles, evil results will surely follow. We have frequently pointed out the duties which devolve upon medical practitioners in educating patients suffering from pulmonary tuberculosis as to the prophylactic measures which they should adopt in order to prevent themselves becoming a danger to others. So in the matter of the artificial feeding of children a little instruction to the mothers and supervision of the surroundings would doubtless do much in the prevention of one of the most fatal of infantile diseases.

School Sanitation at Blackburn.

THE Health and Education Committees of the County Borough of Blackburn have given very remarkable evidence of the excellent spirit in which they have entered upon the important duties imposed upon them by the Education Act and have set an example which will, we hope, be widely followed in other localities. They have instructed their medical officer, Dr. ALFRED GREENWOOD, to make a complete investigation into the sanitary conditions of the 52 public elementary schools under their jurisdiction and his report, an octavo volume of over 400 pages, with detailed plans of the schools and numerous tables, has been published under their direction. Dr. GREENWOOD, it is hardly necessary to say, has acquitted himself in the most admirable manner and has produced a report which may well serve as a model for any who are called upon to undertake similar duties. He first summarises the rules for planning elementary schools which have been issued by the Board of Education, comparing them in some respects, and not always to their advantage, with those which are in operation in America; and after a general discussion of the questions of superficial and cubic space, of roofs, entrances, and staircases, of cloak rooms and lavatories, of lighting, of ventilation, of warming, of sanitary arrangements, of desks and seats, of water-supply, of sites and playgrounds, and of infants' schools, he gives a copy of the form which he employed for the purpose of systematically recording the results of his inspections—a form in which no single point appears to have been overlooked. A second chapter gives the detailed results of this inspection for every school, with a plan and measurements of every room in each, and with definite recommendations for the correction of every defect that was discovered. The third chapter contains the results of a chemical examination of the air of schools for carbon dioxide; the fourth, the results of a bacteriological examination; and the fifth is devoted to general recommendations in addition to the specific ones made for each school. The total result is that a comparison of the volume with the state of the schools at any future time will afford conclusive evidence of the extent to which the committees concerned have set themselves to remedy faults which have been officially brought under their notice and of which no one can now profess to be ignorant. Out of the mouth of their own officer the Blackburn authorities will in the future be either justified or condemned, and the publication of his report may be taken as an eminently hopeful indication of their intentions. In the meanwhile it is satisfactory to note that the quality of schoolroom air, as tested by the quantity of carbon dioxide, has definitely improved in Blackburn since the date of an examination made seven years ago, and Dr. GREENWOOD attributes the improvement to a better recognition of the importance of ventilation by the teachers.

The chapter of the report relating to the bacteriology of schoolroom air can only be described as somewhat meagre, or at least as descriptive of researches which might have been extended with advantage. They consisted only of the exposure in the rooms for short periods of gelatin or agar plates and of the subsequent counting of the colonies which grew upon them, without any attempt to determine the precise character of the bacteria concerned or the sources from which they were derived. Dr. GREENWOOD makes no reference to the work of FLÜGGE on the identification of salivary bacteria suspended in the atmosphere—work which, if we are correctly informed, has recently been considerably extended by inquirers in this country, with especial reference to the distribution of such bacteria by speaking laughing, sneezing, coughing, or even by ordinary expiration. Many of our readers will remember a picture by MULREADY, now in the South Kensington Gallery, entitled "Choosing the Wedding Dress." It hangs at about sight level, and after it had been exhibited for two or three years the attention of the keeper of the gallery was directed to a marked change in the character of its surface—a change which was traced to the projection against it of an infinite number of droplets of saliva from visitors who had stopped in front of it and had laughed as they looked. The resulting film of dried saliva was cleaned away and the picture was then placed under glass for its protection. This coarse experiment, as well as the more delicate ones to which we have referred, must be held to show the importance of the bacteriological study of schoolroom air in relation to the spread of many infectious diseases, and not merely, as Dr. GREENWOOD appears to have regarded it, as a measure of atmospheric impurity. Even in this form, as it does not appear to have been employed previously at Blackburn, there are no data for a comparison between the present and earlier times; but it may be assumed that observations of a similar kind will be continued and extended, and that important results are likely to be obtained from them. It would, of course, be of special importance to examine suspended salivary bacteria at periods when diphtheria or other diseases affecting mucous membranes were prevalent in the district, and it is quite possible that timely warnings of danger might in this way be obtained.

We cannot leave the subject of school sanitation without calling attention to an extremely interesting pamphlet, reprinted from the *Medical Chronicle* for June, in which Dr. R. T. WILLIAMSON of Manchester, the delegate from the Victoria University of Manchester and the Manchester and Salford Sanitary Association to the first International Congress of School Hygiene, held in April at Nuremberg, gives an account of the proceedings in which he took part. It has long been evident to ophthalmic surgeons that a large proportion of the books used in schools are printed in

such small and crowded type as to be exceedingly objectionable; and Dr. WILLIAMSON quotes from COHN a simple test of the fitness of a printed page for school use which ought to be universally known and employed. It consists of an ordinary card, say a visiting card, in the centre of which a square hole is cut, each side of which measures exactly one centimetre. The card with the centimetre square hole is placed upon the page to be tested, the lower margin of the hole being immediately above a line of print. If the type be satisfactory only two lines of print can be seen within the square, and, according to COHN, all books should be condemned in which this condition is not fulfilled. An account is given of a very simple and ingenious contrivance, also devised by COHN, for testing the illumination of every part of a room, the requirement to be fulfilled being that at least 20 small figures should be read in 30 seconds at a distance of 40 centimetres from the eyes. Dr. GREENWOOD and other medical officers of health who, like him, feel the importance of such an extension of their work as may bring the requirements of schools completely within their cognisance and under their control, may render good service by directing the attention of their committees to many matters of this kind, and it may be hoped that when the second International Congress is held in London in 1907 the contributions of Englishmen to its proceedings will be of sufficient number and importance to show that the value of the children of the nation, as part of its capital and as a support when speaking with its enemies in the gate, has not been lost sight of either by the members of the medical profession or by the various and sometimes rather heterogeneous local authorities to whose tender mercies the education of these children has been committed.

Annotations.

"Ne quid nimis."

HEALTH AND EDUCATION.

ONE of the most serious obstacles to the progress of sanitary reform in this, as, indeed, in most other countries, has been, and is, the indifference on the part of the masses to all ordinary considerations of personal hygiene. The public health in the aggregate mainly depends on the hygienic morality of the individual. No legislation can enforce the open window any more than it can stop expectoration in the streets. The only practical measure which holds out any prospect of success of improving the standard of personal hygiene among the people is to educate the rising generation in its elementary principles and in the advantages which are likely to accrue from their observance. That this method of utilising the receptiveness of the child's mind and of reaching the objective by a route apparently so circuitous is founded on sound principles and fruitful in practice is clearly evidenced by the marked improvement in the general appearance of neatness and cleanliness of the children who attend at the public elementary schools. But to engender a proper sense of the advantages of an enlightened domestic and personal hygiene it is not only necessary that the teachers themselves should have an adequate knowledge of the essentials of sanitation and hygiene, but also that the precepts which they teach should be pushed home by example and by a strict observance of their laws in the administration of the schools themselves. In this connexion the report of the committee intrusted by the British Association for the Advancement of Science with the duty of inquiring into the conditions of health essential to the carrying on of the work of instruction in schools has naturally been received with considerable interest. This report, which was recently read at the meeting of the association at Cambridge, embodied, among a number of other important considerations, draft recommendations for a course of study in hygiene to be pursued by those proposing to act as teachers in the public elementary schools. The proposed curriculum, though necessarily incomplete and schematic, cannot be regarded otherwise than as well adapted for fulfilling the purposes for which it is intended—that is to say, of providing a course of instruction in hygiene for teachers which will not only enable them in their turn to instruct their pupils in the ways of personal health but also to conduct the general management of the schools and class rooms with an intelligent appreciation of the aims and objects of hygiene and sanitation.

DIFFICULTIES OF CHLOROFORMISATION.

THE extreme difficulty which often confronts the anæsthetist is well illustrated in the clear notes furnished to us of a death under chloroform. The method which appears to have been carried out carefully is one which must always render irregular doses of chloroform possible. Care, such as was used in the present case, and experience undoubtedly lessen its dangers and many competent authorities rely upon the method and even regard it as one of the best competent hands. The facts of the case are as follows. On August 16th the patient, a male, aged 30 years, an ex-soldier, of somewhat slight physique and pale complexion, was anæsthetised in order to have a necrosed femur operated on. Examination prior to administration of the anæsthetic showed the chest, heart, and lungs to be apparently normal. Chloroform was given from a drop-bottle on a flannel mask. The patient passed easily to the second degree of anæsthesia, when he struggled with his arms for a second or two and then went on quietly taking the anæsthetic until the breathing being quiet and regular, the pulse about 90 and of fair quality, the pupils about three and a half millimetres, and colour as at the commencement of anæsthesia, he was wheeled into the theatre from the adjacent room and put on the table. Directly this was done the face became pale, the lips and ears cyanosed, the patient gave about eight or ten gasping inspirations like the inspiration of air-hunger, and respiration ceased. Immediately on the alteration of the colour and respiration the head was lowered and artificial respiration was commenced, and a hypodermic injection of strychnine and an enema of brandy were given. The administration of the chloroform had been stopped whilst the patient was being lifted from the stretcher on to the table. The heart failed when the change of colour took place before the complete cessation of respiration; this observation was made by the surgeon in charge of the case. Artificial respiration was persisted in for three-quarters of an hour but without result. The administration of the anæsthetic had been in progress for seven minutes; the amount of chloroform used was three and a half drachms. No necropsy was made. The salient features about the case, so far as can be judged without having witnessed the phenomena exhibited by the patient, appear to be: slight struggling, such as is common to the second degree of chloroform narcosis and failure of respiration ensuing upon lifting the patient from the wheeled couch on to the operating-table. We may presume that during this struggling the chloroform mask was removed from the patient's face. If this were not so an overdose would readily be given and its results might not show themselves

for a short time, especially if during the conveyance of the patient to the theatre the chloroform frame was kept applied. But independently of this possibility, the evidence of which is wanting, there remains the sudden collapse upon lifting the patient. The danger of this has been recognised and cases have been reported of deaths which occurred at the moment of lifting a chloroformed patient upon the operating table. The anæsthetist in the case before us regarded the death as primarily circulatory and failed to recognise any cardiac movements even when respiratory efforts continued. Whether complete inversion was practised we are not told but it would appear to have been indicated even if Prus's somewhat heroic measure of actual compression of the heart within the pericardium were considered unjustifiable. In desperate cases this method, as pointed out by Professor Keen of Philadelphia, presents at least a reasonable chance of maintaining circulation while the chloroform is eliminated by artificial respiration. A very great authority upon the subject has placed on record that he believes no patient need die from chloroform if at the first sign of peril forcible perflation of the lungs is practised. We fear that few hospitals have apparatus for such perflation. Even when all is said and done the fact must remain that some deaths will always occur under an anæsthetic, although the anæsthetic may have either no share in bringing about the catastrophe or at least only a contributory effect.

THE PAST SUMMER.

THE appended table shows the chief meteorological data at certain representative spots in the north-east, south-east, and south-west of Great Britain for the past summer, i.e., June to August. The most striking contrast is perhaps the large amount of rain that fell in the northern and south-western counties when compared with that experienced in the south-east. At Margate, the driest spot, the aggregate amount of the three months was less than half that at Bath, only a third that at Harrogate, and nearly four times less than the large amount that fell at Plymouth. The number of days with rain (those on which at least 0·01 inch was measured) were also far fewer in the south-east than elsewhere. Almost all the south-western stations had at least two rainy days to one at Margate. In the matter of sunshine, again, the advantage was all on the side of the south-east, and it is certainly surprising that even the metropolis, with its dust-laden atmosphere, should have had as many hours of sunshine as Plymouth, the Scilly Isles, and Bath. Leaving Jersey out of account, as that station partakes more of the climate of Normandy than of these islands, Torquay was the most sunny spot of the south-western group. When, however, an equable temperature is required it is the south-west coast that is superior. This is not shown so much in the means of the maxima and minima as in the absolute highest and lowest. Margate had a mean range of no more than 14°, which cannot be called excessive, but the difference beween the hottest day and the coldest night was as high as 52°, or only 5° less than London, a city noted for its heat during the daytime in summer and its relatively cool nights. At Great Yarmouth, however, the range was really remarkably small, only 2° less than at Plymouth. This was due to its cool day temperature, which was no higher than that at Scarborough and Harrogate. Apart from Yarmouth the stations with the least range were Torquay, Scilly, and Aberystwyth. The Scilly Isles prove their temperate summer by the fact that the thermometer did not once ascend above 70° and just touched that point on one occasion only—on July 10th. The small amount of range at Aberystwyth does not appear to be peculiar to that particular spot of the Welsh coast, as the observations reported daily to the Meterorological Office from St. Ann's Head, near Pembroke, show extremely little difference between the maxima and minima throughout the year. The low mean maximum at the Welsh station—lower than any except Aberdeen—is chiefly due to the many cool days during June, the average maximum for that month being only 58·0°. The mean daily amount of ozone is given for Torquay only, where at 9 A.M. it equalled the following: June, 51 per cent.; July, 38 per cent.; and August, 45 per cent. The relative humidity of the air at the same place and hour was: June, 73 per cent.; July, 76 per cent.; and August, 73 per cent.

Stations.	Highest maximum temperature.	Lowest minimum temperature.	Mean daily maximum.	Mean daily minimum.	Mean daily temperature.	Days with rain.	Total fall.	Number of hours of sunshine.
Blackpool	80	39	66	51	58·5	43	5·44	656
Aberystwyth ...	83	49	63	56	59·7	45	6·68	691
Scilly	70	50	64	56	59·6	46	5·68	674
Plymouth	79	42	66	54	59·9	42	10·15	679
Torquay	78	45	66	55	60·4	38	8·60	708
Jersey	85	48	68	56	62·0	40	5·96	782
Aberdeen	74	38	62	49	55·4	43	4·19	490
Scarborough ...	80	44	65	51	57·9	35	4·71	562
Yarmouth	79	43	65	55	59·9	27	5·09	—
Clacton-on-Sea ...	77	42	67	54	60·7	29	3·97	808
Margate	90	48	69	55	60·0	20	2·94	728
London	91	44	73	53	62·4	26	3·97	680
Harrogate	76	41	65	49	57·4	38	8·81	544
Bath	84	40	69	52	60·2	38	6·55	651

MENTAL DISEASE AND EYE-STRAIN.

THE only organ of special sense that has been usually supposed to cause by reflex action various disturbances of the central nervous system is the eye. In a paper read at a recent meeting of the New York Academy of Medicine and published in *Medical News* of July 23rd Professor Charles Dana of New York refers to the notoriety attributed to the eye as a supposed centre of nervous strain. "No one, on the other hand," says Professor Dana, "has ever heard of ear-strain or tongue-strain." Two classes of eye-strain were mentioned by Professor Dana—viz., eye-strain proper, which was the reflex effect produced by failure of the nervous mechanism of accommodation to act properly, and cerebral eye-strain which was due to conscious efforts made to overcome ocular defects. It was this latter class of affection which was supposed to be the basis of functional nervous disturbance. It was well to realise that this was really brain-strain instead of eye-strain. "No true mental disorder was ever due," adds Professor Dana, "to reflex from the eye or was ever cured by correction of optical defects." Cases of psycho-neurasthenic exhaustion or depression followed eye-strain in students and bookworms suffering from errors of refraction of the eyes. Rest alone failed to cure these, glasses were necessary. Men of middle age suffering from the coming presbyopia of advancing years were also liable to neurasthenic exhaustion following eye-strain. These cases were, he said, liable to develop a greater degree of depression of spirits and glasses will also correct and cure them. "Not infrequently there is no symptom that points very distinctly to the eye in these cases, and unless the physician is on the lookout the true cause of the mental depression may escape his notice." Minor psychoses were not produced by errors of refraction, at least Professor Dana has not found them in his practice. Patients with sound minds, says he, "are not alienated by defect of vision, patients with neuropathic or

psychopathic hereditary tendency may tend to insanity and may get worse, but the innate taint is the real factor." As a matter of fact, the only real mental affection connected with eye-strain, concluded Professor Dana, was the symptom of grandiose ideas of the ophthalmologist who thought that he was able to trace all the failures of genius and all its ailments to the absence of spectacles. In the discussion which followed the reading of the above paper Dr. Bernard Sachs said that the relation of dependence of the so-called "motor" neuroses (epilesy, chorea, and convulsive tic) on eye-strain had been greatly exaggerated. As the true nature of these neuroses came to be better understood fewer cases were reported. An investigating committee of the New York Neurological Society inquired some years ago into various alleged cases of the cure of epilepsy by glasses and after carefully following 14 cases found that not one of them had been improved and that the evidence in other reported cases was untrustworthy. "The reports of cures were morbid literary productions which appeared only in American literature." In recent monographs on epilepsy published in Europe, added Dr. Sachs, very little weight was given to the alleged factor of eye-strain in epilepsy. At Craig Colony, he added, several epileptic cases were examined and their errors of refraction corrected. A careful observation of these cases after a full year proved that out of 68 patients one had improved but that all the others remained in the same condition as before. Dr. G. E. de Schweinitz said that headaches from eye-strain could be relieved but that migraine was never relieved by correcting ocular errors. Similarly chorea was not relieved by such treatment. Dr. Joseph Collins said it was well that optical defects should be properly and early corrected in children so as to make them not averse to or incapable of reading and the use of the eyes for education, since normal mental development would otherwise be retarded.

WASP AND BEE STINGS.

AT this season of the year the frequency of cases of wasp and bee stings usually attracts the attention of the lay journals and newspapers, although owing to the simple character of the resulting lesions and their symptoms very meagre references are, as a rule, to be found in the text-books on medicine or in medical journals. At the same time, although in the majority of cases the simplest domestic remedies afford relief, yet in others the results may be so severe that the nature of the condition and its treatment are well worthy of more attention than has hitherto been devoted to them. Our contemporary, the *Standard*, in its issue of Sept. 5th publishes under the above heading two letters received by the editor. In the first of these the writer, who describes himself as a bee-keeper of a large apiary for over 30 years, casts doubt on the utility of outward applications to bee or wasp stings and states that this is the opinion of most scientific bee-keepers. The reason given for this opinion is that "the formic acid is so rapidly absorbed by the system that such antidotes fail to reach the poison and so to minimise the result in time to be of service." Whatever the value of topical applications may be there is a fallacy in this statement, for although formic acid does exist in the poison of the bee it is highly probable that there are other more complex organic substances of the nature of poisonous proteids to which some of the more severe symptoms occasionally resulting are to be attributed. In this connexion we may refer to the highly interesting communication made by M. Phisalix to the meeting of the Academy of Sciences at Paris on July 25th, of which a *résumé* was given in THE LANCET of August 27th, p. 644. M. Phisalix found that sparrows are very susceptible to the poison of bees and that in them various symptoms of paralysis with choreic movements develop, death occurring from respiratory failure in two or three hours. He states that the poison as inoculated by the bee contains three principles—one convulsive, one stupefying, and one inducing inflammatory changes. In man the susceptibility to the poison must vary widely in different individuals, since all grades of severity are seen, from mere local redness with slight swelling and itching or smarting to general urticaria with nausea, vomiting, and some prostration.[1] Indeed, a fatal case has been recorded,[2] death occurring 25 minutes after a wasp sting. These generalised results can only be explained as the effect of some toxin; the local results may possibly be due to formic acid but in the light of M. Phisalix's work they may be due to the inflammatory principle of the poison. We do not share the views of the correspondent of the *Standard* on the uselessness of local applications, since ammonia seems in many cases to afford rapid relief to the local condition, while some of the many domestic remedies, among them that recommended by a second correspondent of the *Standard* of rubbing a sliced onion over the sting, are not to be despised. The onion treatment, which is a very old one, is certainly efficacious in many cases although it is not easy to give an explanation of its action. In the very severe cases it is necessary to adopt more active treatment, giving stimulants such as ammonia or alcohol internally, and practically to treat the case as one of poisoning.

VEGETARIANISM.

WE have received a letter from a correspondent in India who signs himself "Proteid" requesting information concerning "good books or literature against the fad of vegetarianism which has for some time past caught hold of the minds of several people in the native communities." It is a little difficult to discuss the question of vegetarianism owing to the somewhat loose manner in which the term has been applied. We may take it, however, that there are two chief classes of vegetarians—those whose diet consists entirely of plant products and those who partake also of certain substances of animal origin, such as milk and eggs, but not of the flesh of animals in any form. Against the strictly vegetarian diet many objections can be raised—thus it must of necessity be more bulky than a mixed dietary; again, plant proteids are less easily digestible and assimilable than are those derived from animal sources; while many of the cellular proteids, especially those of the leguminous family which form so important a constituent of most vegetarian dietaries, contain purin bodies similar to those in the nucleo-proteids of animal cells. On the other hand, it is more or less generally admitted that in the diet of an ordinary man, especially in this country, there is a larger amount of meat than is necessary together with the other foods taken, to provide enough nitrogen in the form of proteid to maintain nitrogenous equilibrium and to repair waste, and there are, no doubt, conditions in which a modified vegetarian diet—that is, one including milk and eggs—may be suitable. Moreover, the practical experience mankind has achieved in the matter of dietaries in the course of the ages must not be lightly set aside, and it would seem that in a country like India, where for centuries a considerable proportion of the population have been practically vegetarians, such a diet may be quite satisfactory. Again, the fact must not be lost sight of that in many countries the composition of the diet of the majority of the population may be largely a matter of expediency and cheapness—thus it would probably be a difficult matter for the Esquimaux to be strictly vegetarian or for the teeming populations of India and China to be meat-eaters to any great extent. Fortunately, mankind

[1] THE LANCET, Oct. 26th, 1901, p. 1120.
[2] Brit. Med. Jour., Nov. 5th, 1898, p. 1429.

can sustain life on the most widely different dietaries and we may take it that for the ordinary man that diet is the best on scientific and utilitarian grounds which affords the necessary proximate principles in the most assimilable form consistent with palatability and cheapness. That in this country this is attained by a mixed diet containing a small amount of animal proteid is a matter of general experience.

REVOLVING HOUSES.

ON, no doubt, quite sufficient grounds experts in hygiene are accustomed to lay a good deal of stress on the importance of correctly orientating dwelling houses, so that they may receive the maximum amount of light and of protection from cold winds. It certainly does appear that, in this country at any rate, the more the rooms in which we live are exposed to the rays of the sun the better, for sunlight seems to be at once stimulating to human vitality and destructive to that of many objectionable low forms of life. Experience has taught us to select as far as is practicable a southern aspect for our houses, but even when this is done the fixity of the structure prevents our regulating the supply of sunlight to different rooms according to our varied tastes. Two French gentlemen—Dr. Pellegrin and M. E. Petit, an architect of Paris—propose to change all this. They have designed a method of erecting houses on rotating platforms, so that the building can be made to face in any required direction at any time. The platform is supported on two concentric walls, the inner chamber so made containing a stairway, and the axis of rotation is occupied by a shaft through which pass the supply and waste pipes of the house. A gas or petrol engine is employed to move the platform—and if necessary it can be used to drive clockwork which will enable the house front to follow the sun during the day. There are obvious difficulties in the way of the general adoption of schemes of this kind but the idea is one worthy of the attention of British architects.

NEPHRITIS DUE TO BORAX.

THE extensive use of boric acid and borax as food preservatives has led to repeated controversies as to whether they are injurious to the consumer. The correspondence which is now appearing in our columns demonstrates the various opinions that are held and the difficulties that may arise in sifting evidence on the subject. The question is not easy to settle because a preservative which would cause obvious injury after being taken in food for a short time could not come into general use. Occasional ill effects, such as have been ascribed to boric acid, have been attributed to idiosyncrasy or regarded as a mere coincidence and due to other causes. The only other source of evidence is experiments on animals. It has been stated by Dr. Féré and others that the medicinal use of borax is attended by the risk of producing or aggravating renal disease but this has been denied by Liebreich. In the *American Journal of the Medical Sciences* for September Dr. Charles Harrington has described some important feeding experiments which support Dr. Féré's conclusion. 12 healthy cats were fed on the same food. One was given no preservative, six were given borax, and the remaining five were given a preservative which proved to be innocuous. The quantities of borax given to the cats were as follows: No. 1, 72·5 grammes in 133 days (average daily dose 0·54 gramme); No. 2, 112 grammes in 133 days (average daily dose 0·84 gramme); No. 3, 28 grammes in 42 days (average daily dose 0·66 gramme); No. 4, 108 grammes in 133 days (average daily dose 0·81 gramme); No. 5, 106·5 grammes in 133 days (average daily dose 0·8 gramme); and No. 6, 48 grammes in 56 days (average daily dose 0·85 gramme). Of the 12 cats three became ill and these had all taken borax. No. 4 soon sickened and died at the end of the sixth week. The other two were ill occasionally but during the last weeks of the experiments appeared to be normally active. At the expiration of the periods given above the remaining 11 cats were killed. The necropsies of those which had not taken borax showed no lesions. In the bodies of those which had taken it, with the exception of No. 2, nephritis was found. Stained sections of the kidneys showed lesions of the same character differing in intensity. The epithelium of the tubes, particularly of the convoluted tubes, was degenerated. The normal fat vacuolation was greatly increased and the cells were swollen and in places disintegrated with fragmentation of nuclei. In the lumen of many of the collecting tubules were granular masses representing cell fragments. Some tubules were almost completely stripped of epithelium. In one kidney the change was confined to intense degeneration with hyaline casts in the small tubes. In the others the degeneration was not so intense but was accompanied by foci of cellular infiltration, chiefly marked at the cortex. Where the infiltration was most intense the tubules were entirely destroyed. The lesions were analogous to those of subacute and chronic nephritis in man but did not correspond to any definite type. It may be objected that the daily dose of borax in proportion to weight was much greater than a person would receive in food. But this is not so and, moreover, it has been asserted that borax is quite innocuous even in large doses. A person may easily take in the course of the day in preservatives used in food large quantities of borax without knowing it. The following list showing the quantities of borax used as a preservative shows the possibilities: milk, 2 grammes per quart; butter, 2 grammes per pound; cream, 1 gramme per pint; oysters, 4·5 grammes per pint; corned beef, 18 grammes per pound; ham, 18 grammes per pound; and sausages, 4 grammes per pound. Thus in the day a person might easily take in such food as much as 14 grammes of borax.

THE WORK OF THE RED CROSS SOCIETY.

A SOMEWHAT lengthy but none the less interesting review, by Dr. E. Laval, of the work of the Red Cross Society appears in the numbers of the *Revue Scientifique* dated August 27th and Sept. 3rd, under the title of "La Croix Rouge en France." The purpose of the articles is to urge upon the people of France the need for extending the operations of those associations which represent the society so that the cause of humanity may be served as well in times of peace as during war. As showing how large is the field open to the efforts of the beneficent a comparison is instituted with other European countries from which we learn how varied are the activities of the different bodies which originated as a result of the Geneva Convention of 1864 and the primary object of which was the relief of the distresses incidental to resort to arms. In Germany the Red Cross Society assists in the management of the "Unfall-Stationen," or stations for the care of the victims of accidents, and at these stations the members of the Patriotic Union of Women, a branch of the Red Cross Society, receive training. Against tuberculosis the society has fought by: (1) promoting the building of sanatoriums; (2) looking after those dependent on the invalid during his stay in the sanatorium; (3) helping those discharged from sanatoriums to obtain employment; and (4) seeking out early cases of pulmonary tuberculosis and urging upon them the necessity of treatment while there is a good prospect of recovery. Further, the German branch of the society, carrying out the idea of our fresh-air funds and similar institutions, provides in the woods near Berlin rest-houses, or "Erholungsstätten," where sick persons, to whom special facilities are given for the journey,

may spend the day under the supervision of some competent person. In Austria the society has done its best to check the spread of epidemic disease, as, for instance, by the provision in 1899 at Landskron (Prague) and Jadendorf (in Silesia) of accommodation and medical care for those suffering from typhus fever. The Spanish branch devotes itself to State hygiene—e.g., combating approaching epidemics by encouraging disinfection—and it has also on occasion brought succour to sufferers from floods and fires. One of the features of the work of the society in Switzerland is the establishment of an employment bureau for nurses, while in Italy the society has done much to check the mortality from malaria by founding in 1901 six ambulance corps to transfer cases from the malarial regions to the hospitals in Rome. Japan in 1883 took up the matter with characteristic thoroughness and its Red Cross has now 600,000 followers who come to the help of those affected by all public calamities whether earthquakes, floods, shipwrecks, railway accidents, or epidemic diseases. France with its colonies has a population of about 75,000,000 but only 120,000 persons among these display a practical interest in the humanitarian schemes of the three bodies which, without really constituting branches of the Red Cross Society, carry on its work. These bodies are: (1) the Société de Secours aux Blessés des Armées, founded about 1864, the utility of which has been greatly impaired by internal dissensions; (2) the Association des Dames Françaises, which was established in 1879 and from which split off in 1881 (3) the Union des Femmes de France. Dr. Laval's paper is an earnest appeal to these different agencies to sink their jealousies for the common good and to combine in the construction of a charitable organisation which shall remove the reproach of selfish indifference to the woes of their fellows from the wealthier classes in France.

THE APPRECIATION OF NOTHING.

IN the Middle Ages philosophers were acutely divided on the question as to whether things were really things or only names—that is to say, whether they were something or nothing—and the late Lord Iddesleigh when Sir Stafford Northcote once held a village audience in wrapt attention while he delivered a lecture "On Nothing." The conception of nothing is as difficult for the finite mind as is that of infinite space and perhaps of all the arts the one best adapted to express nothing is the highest of the fine arts—namely, music. During the present season of concerts at the Queen's Hall Mr. Wood and his magnificent band have given voice to the thoughts of three composers who in two cases purposely, and in one case apparently, have strivén to represent nothing. The apparent case was a composition by M. Claude Debussy, a leader in the most modern French school of composition. His "Après midi d'un Faune" goes as near to the audible expression of a day-dream as anything audible can, although what a faun, which is not a gazelle, as the critic of a contemporary believes, does think about we should say that no one knows. Of the other two pieces that by Sir Edward Elgar is founded upon a passage of Lamb which occurs in the essay, "Dream Children," and which runs: "We are not of Alice, nor of thee, nor are we children at all. ..... We are nothing; less than nothing, and dreams. We are only what might have been." The third piece is the amazing scherzo movement from the Fourth Symphony by Tchaikowski of which the composer gives his own interpretation thus: "In the third movement no definite feelings find expression. These are but capricious arabesques. One thinks of nothing. ..... These are the incoherent pictures which float before the fancy divorced from reality." Anyone who hears this movement will recognise with what truth the composer has succeeded in representing nothing, especially in that part of the movement which is allotted to the pizzicato strings. Music, to those who know how to hear, brings home the higher activities of mentality better than any other medium and the psychologist and the thinker may find that abstractions become clear when presented to their minds by the joint art of composers, instrumentalists, and a conductor of such quality as are to be found at Queen's Hall.

THE NEW DIRECTOR-GENERAL OF THE MEDICAL DEPARTMENT OF THE NAVY.

THE Admiralty has issued the following notice:—"Inspector-General of Hospitals and Fleets Herbert Mackay Ellis has been appointed Director-General of the Medical Department of the Navy in the place of Sir Henry F. Norbury, K.C.B., R.N., whose term of office has expired, To date the 12th September, 1904." The new Director-General served with the battalion of Royal Marine Artillery throughout the campaign in Egypt in 1882, being present at the two engagements at Kassassin and at the battle of Tel-el-Kebir. He was mentioned in despatches, promoted to the rank of staff-surgeon, and was awarded the medal with Tel-el-Kebir clasp and the Khedive's bronze star. He was fleet-surgeon of the *Victoria* when she was rammed by the *Camperdown* off Tripoli in June, 1893. His last appointment was that of inspector-general in charge of Haslar Hospital. We consider that the Royal Navy Medical Service is to be much congratulated upon this new appointment.

RECOVERY FROM MALIGNANT ENDOCARDITIS.

THE following case, reported in the *Boston Medical and Surgical Journal* of July 28th by Dr. C. F. Withington, is of interest both because of the rarity of gonorrhœal endocarditis and because it is an example of recovery from malignant endocarditis—the possibility of which has been questioned. A man, aged 26 years, was admitted to hospital on April 19th, 1904. A first attack of gonorrhœa began on March 8th. Two weeks later he had measles. During convalescence from the latter disease he was seized with severe pain in the region of the heart and dyspnœa which lasted for four hours. Chills, irregular fever, sweating, and cough followed and persisted up to the time of admission. Four days before admission he had pain in the left leg which rapidly swelled and turned purple. On admission he looked very ill. The temperature ranged from 102° to 103° F. and the pulse from 160 to 170 and there was orthopnœa. Cardiac dulness extended three centimetres to the right and 16 centimetres to the left of the middle line. A presystolic thrill was felt below the nipple but no murmur was heard at the apex. A short systolic murmur was heard in the left fourth intercostal space. There was "gallop rhythm." At the bases of the lungs were limited areas of consolidation. There was marked phlebitis of the left leg throughout. The left calf measured three inches more than its fellow and the thigh was only a little less swollen. There was marked tenderness over the popliteal and femoral veins. A leucocytosis of 16,200 was present. During the next few days the action of the heart grew less tumultuous, the murmur became more distinct, and the pulmonary second sound increased. The temperature ranged between 101° and 103°. Blood taken from the bend of the elbow on April 25th yielded a culture of the gonococcus, confirming the view that the endocarditis was gonorrhœal. The temperature became normal on the 28th and two days later the phlebitis was less distinct. On May 8th the murmur was still present but there were no other cardiac symptoms and the area of cardiac dulness was diminished. Early in June the patient was in fair health

the murmur was still heard but the areas of pulmonary consolidation, which were thought to be embolic, were nearly resolved.

THE AMBULANCE IN CIVIL LIFE.

A *brochure* on "Ambulance in Civil Life" is again published as a sixth edition of the address delivered in 1881 by Mr. Reginald Harrison as President of the Liverpool Medical Institution. The present issue, however, contains an account of the efforts that are being made by the Metropolitan Street Ambulance Association to secure for the County and City of London an improved ambulance service. To this end we wish it every success and hope that what was suggested many years back by the Hon. Francis D. Leigh in the *Nineteenth Century* and by Mr. S. Osborn of the St. John Ambulance Brigade will eventually be realised. Without entering into prolonged details of what has been done and what is required great credit should be given to Sir John Furley who was the first to organise any work of this description in the streets of London. The Metropolitan Corps of the St. John Ambulance Brigade with its able body of volunteer workers was started 25 years ago and the present chief surgeon, Mr. S. Osborn, with Mr. J. Brasier and Mr. W. H. Morgan, who then assisted Sir John Furley in his first efforts, still continue to render good service in the streets on all public occasions, and with them must rest the honour of being the first workers in a cause which we should like to see perfected for constant service by incorporation with some such body as the Metropolitan Fire Brigade. Of course this would mean the supplementing of that admirable body of workers by a sufficient number of men, horses, and ambulances to deal efficiently with the task, but this scheme has already been fully considered by the Metropolitan Street Ambulance Association.[1]

ACETONURIA AND DEATH AFTER ANÆSTHESIA.

IN the *Boston Medical and Surgical Journal* of July 7th Dr. E. G. Brackett, Dr. J. S. Stone, and Dr. H. C. Low have reported a series of cases observed at the Children's Hospital, Boston, in which death occurred in peculiar circumstances. On Oct. 6th, 1903, a boy, aged 10 years, suffering from infantile paralysis but otherwise apparently well, was admitted. Four days later he began to vomit persistently light green fluid. The bowels had acted freely and the abdomen was soft and not distended. The pulse became very weak and rose to from 90 to 150 and the temperature rose to 105·8° F. He became unconscious and died 20 hours after the onset of the symptoms. On the same day a girl, aged eight years, was admitted also suffering from infantile paralysis. She seemed delicate but otherwise was sound in health. Several times in the preceding year she had had attacks of persistent vomiting with collapse. Four days after admission three tendon transplantations were done under ether. The operations occupied one and a half hours and were not severe or attended by hæmorrhage. The child took the ether badly and during the operation had a rapid pulse. 12 hours after recovering from the anæsthetic she seemed in fair condition. Then she suddenly began to vomit persistently. The pulse became weak and rose to 190 and the temperature rose to 106°. The vomiting lasted about 30 hours. She gradually sank into a delirious stupor and died 42 hours after operation. Six weeks later, on Nov. 17th, a girl, aged five and a half years, with extensive infantile paralysis had the fascia on the upper and outer part of both thighs divided. She recovered well and was comfortable up to 13 hours after the operation. Then she began to vomit. 24 hours after operation the face became cyanotic, the extremities cold, the pulse weak and rapid, and the expression anxious. She gradually became comatose and died 48 hours after operation. A peculiar sweet odour from the breath led to examination of the urine for acetone and diacetic acid which were found. On Dec. 17th two girls with extensive infantile paralysis, aged six and eight years respectively, were admitted. One began to vomit after six hours and the other after 15 hours. Both became stupid; there was an odour of acetone from the breath and the urine contained acetone and diacetic acid. Both recovered. On Dec. 26th a girl, aged four years, was admitted. For six days she had been vomiting and the bowels had not acted. The odour of acetone in the breath was very strong and acetone was found in the urine. Intestinal obstruction caused by a Meckel's diverticulum was relieved by operation. After recovering from the operation she became unconscious and died at the end of 26 hours. Subsequently a sweet odour from the breath was noticed in a number of patients after operation and acetone was found in the urine. In most of them vomiting occurred and some of them showed marked prostration. Only one case was fatal. In the fatal cases the necropsies showed some fatty degeneration of the liver, kidneys, and muscles. Death after anæsthesia with acetonuria has been previously recognised. In 1894 Becker reported from the Bonn clinic three fatal cases after operation on diabetic subjects whose condition previously had not caused any apprehension. Brewer in the *Annals of Surgery* for October, 1902, reported a fatal case of acetonuria after operation for appendicitis. In THE LANCET of July 4th, 1903, p. 10, Dr. L. G. Guthrie published an article entitled "The Fatal Effects of Chloroform on Children Suffering from a Peculiar Condition of Fatty Liver." The symptoms resembled those of the cases described above. He thought that death was due to auto-intoxication brought about by three factors—the fatty condition of the liver, the shock of the operation, and the chloroform. The phenomena of acid auto-intoxication apart from diabetes has been studied by von Jaksch, Lorenz, Baginsky, and others. Becker found that after anæsthesia in healthy persons a distinct amount of acetone was present in the urine. But in one of the fatal cases now reported and in some of the milder ones the symptoms occurred without operation or anæsthesia. Perhaps the effects on the nervous system of admission to hospital—home-sickness, dread of operation, and so on—may have affected the metabolism and produced acetonuria. In addition to stimulants, bicarbonate of soda was given to combat the acid intoxication and seemed to have a beneficial effect. Very little is known of acid intoxication and the whole subject, as well as its relation to the administration of chloroform, obviously requires further investigation.

THE ACTION OF RADIUM ON FROGS AND MICE.

Dr. E. C. London of St. Petersburg, whose early experiments with radium are well known, has, according to the *Pharmatzevtitcheski Journal*, published a work giving details of his latest investigations, having as their object the elucidation of the action of radium on animal life. One of them was as follows. A solution of radium bromide was placed in a retort connected by tubing with another glass vessel, both of them being stoppered. In the second reservoir he kept live animals, generally frogs or mice, which were preserved from suffocation during the experiments by means of the periodical admission of fresh air. It was found that frogs placed in a vessel with water in which radium emanations were diffused became flabby and dull; in six or seven days their breathing became troubled and their skin showed want of freshness. These symptoms became more and more accentuated up to the thirteenth or fourteenth day, when the animals died. Flakes from their skin floated in the water. On being

[1] THE LANCET, May 14th, 1904, p. 1365.

taken out their skin was found partially to be decomposed and the blood was abnormally dark in colour. Moreover, from the first day of contact with the radium emanations the frogs became radio-active. Mice died sooner than frogs; after being left for four hours in the vessel where radium emanations had accumulated for 48 hours previously they sickened and died on the third day, although showing no signs of illness previously. Dr. London supposes that they died from an affection of the air passages induced by the action of the radium.

SEEGEN PRIZE.

A PRIZE under the above title of 6000 kronen (£240) has been offered by the Vienna Academy of Science for an essay on the following subject: "To settle the question whether or not a portion of the nitrogen of the albumin which has undergone metabolism in the system is excreted in the form of free gaseous nitrogen either by the lungs or through the skin." The essays may be written in the German, French, or English languages and must be sent in to the Chancellor of the University of Vienna before Feb. 1st, 1906.

IDIOPATHIC EPILEPSY IN A CANARY.

CASES of idiopathic epilepsy are rare in the lower animals. Nearly all such cases previously reported, especially in the bird, where necropsies have been made have proved to be Jacksonian epilepsy of traumatic origin. In the *Journal of Nervous and Mental Disease* for August a case is reported by Dr. Pierce Clark of New York of idiopathic epilepsy in a canary which presented many features of interest. The bird was a male, one year old, from an apparently healthy brood of four. When it came under observation it was the subject of typical idiopathic attacks of *grand mal* with irregular attacks of *petit mal* at intervals of every few days. An attack of *grand mal* was as follows. The bird uttered an epileptic cry and fell backwards from the perch in a stiff general tonic spasm which lasted about 30 seconds. It lay very still on its left side where it had fallen. Then followed a very short clonic spasm, during which the head was turned to the left side and the legs were fully extended. After this epileptic convulsion the bird exhibited violent excitement of an automatic (subconscious) character. "It flew about the cage and dashed itself against the wires." After a few minutes of this sort of activity it lay quite still in a stage of coma lasting six or seven seconds. "It then began to peep and stagger about the cage, still continuing its automatic purposeless acts, such as treating the seed-cup as a water-cup and *vice versâ*, without partaking of the contents of either." After two minutes the attack gradually wore off and the bird acted normally, although it appeared somewhat dazed and did not sing for the next few days. Treatment was adopted of giving bromide by adding a 1 per cent. solution of potassium bromide to its drinking water. Much improvement resulted in the next two weeks, the bird again beginning to sing and to act in the normal manner. Symptoms of bromism (apathy and somnolence) appearing, the dose was reduced. During the next four months only weekly attacks of *petit mal* of a very slight character occurred. Unfortunately, owing to accidental omission of the bromide for a fortnight, a violent series of attacks of epilepsy came on with post-convulsive exhaustion paralysis as follows. The bird gave the epileptic cry and fell backwards from the perch as before. Then followed tonic spasm for 30 seconds with retraction of the legs and turning of the head to the left. Clonic general spasms followed with extension of the limbs, including the wings, and fine tremors and jerkings of the same. The eyelids were in rapid nictitation and the mandibles were opened and shut rapidly in clonic spasm. The bird then dashed about the cage as previously described, only more furiously; finally it lay exhausted as though dead at the bottom of the cage (stage of coma). The attacks grew worse daily and the bird, soon exhausted by them, was no longer able to mount its perch. The bromide was again given to note the therapeutic effect and improvement followed. For a period of eight days the attacks ceased and the bird gained steadily in strength and was apparently normal once more, when one day it was discovered in a peculiar position, standing with its toes outspread and resting partly on its tail. Rapid clonic spasms and a rhythmical nodding of the head, as well as fibrillary twitchings of the body generally, were noticed. It grew worse and died in a few hours. The necropsy, which was made ten minutes after death, showed an apparently normal brain in every respect, the calvarium being also normal. The epileptic attacks, the post-epileptic exhaustion paralysis, the status epilepticus, and mode of death were in many clinical respects like the same in man.

THE OPERATIVE TREATMENT OF ENTROPION AND TRICHIASIS.

THE frequency with which trachoma, followed by entropion and trichiasis, occurs in Australia has led to numerous operations being devised and practised for the relief of those unfortunate patients who suffer from these troublesome sequelæ of "granular lids." The *Ophthalmoscope* for the present month contains an article by Dr. J. W. Barrett and Dr. W. F. Orr, respectively surgeon and assistant surgeon of the Victoria Eye and Ear Hospital in Melbourne, giving an account of a method of operating which they have found to be successful. In the first stage of the operation a long cut is made through the skin of the eyelid down to the tarsus and the skin, subcutaneous tissue, and orbicularis muscle are dissected upwards; gut sutures are then passed through the edge of the skin adjoining the cilia and are secured to the tarsus in its upper portion which effects the eversion of the cilia. The edges of the skin insertion are sutured with horsehair so that the gut sutures are to a great extent buried. If the tarsus is much incurved a V-shaped strip of it may be removed with advantage. In the second stage an intermarginal incision is made from the puncture to the outer canthus, the incision passing up into the substance of the lid behind the roots of the cilia which are all included in the anterior flap. This incision joins that made in the first stage in many places, but bridges may perhaps be left here and there. It permits of a certain amount of sliding up of the skin carrying the cilia on the tarsus. In the third stage the posterior flap containing the tarsus is sutured to the lower lid by gut sutures, so that not only are the cilia displaced upwards, but the tarsus is temporarily displaced downwards for a period of from two to four days and the gut sutures are then cut. The horsehair sutures joining the edges of the skin are removed a little later, whilst the gut sutures uniting the ciliary border to the tarsus are either allowed to stay in altogether or are removed when loose. The results are said to be excellent.

ON THE FATE OF THE HAIRS IN CICATRICES.

IT is a familiar fact that in the process of repair of injuries to the skin, whether produced by traumatic, chemical, or thermal agencies, no regeneration of hair occurs if the hair roots have been completely destroyed. The surface epithelium which in the process of repair spreads over the injured surface no longer possesses a capacity for the formation of hair, like that of the epiblast in embryonic life. Other results are obtained, however, when the hair roots remain in their natural relation with the dermis, even though the epidermis

has been destroyed. Some interesting observations are recorded by Dr. Fritz Lebram on these results in a paper published in the *Centralblatt für Allgemeine Pathologie und Pathologische Anatomie* of July 30th, p. 569. In the first place, little islands of epithelium may start out from the hair sheath and spread over the granulating surface, assisting in the process of healing as shown by F. Marchand.[1] Again, if the hair papilla be uninjured the natural process of growth will go on in addition and a scar will result containing hairs as in the normal skin. On the other hand, the process of granulation tissue formation, and regeneration of the surface epithelium may occur rapidly so that the hair root becomes completely shut in. Under these conditions it may atrophy or develop into a cyst or may continue to grow without reaching the surface. Dr. Lebram describes and figures an example of this latter condition which was obtained from the scar of an operation wound in a case of carcinoma of the breast. In the section a hair is seen cut across in the depth of the scar six times, its apex growing into the deeper parts and not towards the surface. The hair is surrounded by a number of giant cells, having apparently acted as an irritant to the surrounding tissues.

SANITARY MATTERS IN MANCHESTER.

THE report of the Manchester sanitary committee, with its annual record of work up to the end of April last, shows how much the public health depends on the efficiency of the department. From all quarters 47,200 complaints were received by the committee. It is often said, and with a good deal of truth, that the public is apathetic, but they made 2125 of the complaints, while through the medical officer of health's department 27,104 were made, 95 by the police, and 17,876 by the staff. Inspections of registered lodging-houses, of which there are 896, are frequently made. 3996 visits were paid by day and 591 at night. A large number of these houses are not registered and a special inspector has been appointed to look after them. A careful watch is kept over the milk-supply but there are great difficulties in the efficient carrying out of the precautions against the introduction of disease. The need for redoubled care is shown by the increase in the proportion of the various milks taken at the railway stations proved to be tuberculous. It is encouraging, however, to note "that the death-rate from phthisis is much the lowest on record." With regard to small-pox we seem to be becoming resigned to its existence among us, now increasing and again diminishing, the origin often clear, but in other cases eluding all search. This fatalistic attitude is to be deplored. Dr. J. Niven, of course, approves of vaccination and considers that revaccination at the age of 12 years is the essential object to be attained. "If compulsory revaccination at the age of 12 can be brought into operation all difficulties about small-pox hospitals, vaccination of contacts, isolation of families, and so forth, will dwindle to trifling magnitude." In his address to the Sanitary Inspectors' Association at Southport on Sept. 3rd Mr. F. Vacher, the President, medical officer to the Cheshire county council, urged that conscientious objection to vaccination should not be legally recognised and that revaccination should be compulsory. He would remove the oversight of vaccination from the guardians to the sanitary authority. He would have chicken-pox added to the list of diseases compulsorily notifiable and the control of the movements of the vagrant class given to the local authorities. It is pretty certain, however, that the ancient effigy of "the liberty of the subject" would be brought out again, for our theory seems to be that the ignorance or fanaticism of the few shall always be allowed to inconvenience and to endanger the many.

[1] Deutsche Chirurgie, Lieferung 16, S. 163.

WE regret to announce the death so soon after his retirement in May, 1901, of Surgeon-General James Jameson, C.B., who died at his residence in Eltham, Kent, on Tuesday last, aged 67 years. He was appointed Director-General of the Army Medical Service in 1896 and his retirement was announced in THE LANCET of June 8th, 1901. In a future issue we hope to give an extended account of his career.

THE first congress of the Société Internationale de Chirurgie will be held in Brussels in September, 1905, under the presidency of Professor T. Kocher of Berne. All communications regarding the congress should be addressed until further notice to Dr. C. Willems, delegate for Belgium, 6, Place St. Michel, Ghent.

WE regret to announce the death of Dr. William Lee Dickinson which took place quite suddenly on Sept. 6th at Tintagel, Cornwall. We shall publish an obituary notice in a future issue.

THE EVOLUTION OF MAN'S DIET.

BY HARRY CAMPBELL, M.D., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE HOSPITAL FOR NERVOUS DISEASES, WELBECK-STREET.

II.[1]

FOOD AVAILABLE FOR THE EVOLVING MAN.

I PROPOSE now to consider the various diet epochs but before doing so it will be well to take a brief survey of the kind of food, animal as well as vegetable, which was available for the evolving man before he had learnt to increase his food-supply by artificial means—i.e., by cultivating plants and breeding animals.

Vegetable Food.

Seeds.—Seeds constituted the most important sources of the vegetable food of man. Containing as they do an embryo plant, together with a supply of nutriment for it, these are of all vegetable foods the most nourishing, inasmuch as besides starch and fat they are provided with a large proportion of the precious proteid which is absolutely necessary for the upbuilding of animal protoplasm. Some, like the grass seeds, are very small and require to be collected in large quantities before they afford an appreciable amount of nutriment, while others, such as acorns, chestnuts, and the seeds of many pines, palms, and leguminous plants, may individually yield a goodly store.

Fruits.—When, as in the case of the sloe, wild apple, and various species of "berries," seeds are enveloped in a brightly coloured and often luscious envelope which subserves the purpose of their distribution by attracting birds, they and their envelopes constitute "fruits." It should be noted, however, that these fleshy envelopes are in the case of all wild fruits, of comparatively little energy value, consisting as they do in the ripe state mainly of a watery solution of sugars and salts; and as the seeds of fruits are specially constructed to resist digestion so as to pass whole through the alimentary canal, being, in fact, quite undigestible unless laboriously masticated, it is obvious that wild fruits do not afford much nutriment. If, however, they are ground or otherwise specially treated the seeds of some fruits—e.g., of the wild water-melon—may be rendered highly nutritious.

A secondary source of the primitive food-supply lay in fleshy roots and green vegetables.

The fleshy roots.—The term "fleshy root" may conveniently be made to include any underground part of a plant (e.g., tuber, rhizome, tap-root) serving as a store-house of nourishment. Such "roots" are of food value chiefly on account of their richness in starch; they contain but a small quantity of proteid and thus can only serve—and this is true even of

[1] No. I. was published in THE LANCET of Sept. 10th, p. 781.

the cultivated varieties—as accessories to the more nitrogenous foods.

Green vegetables.—Under this term we include the leaves and young shoots of plants; they afford very little nourishment and are chiefly eaten for the watery and saline constituents they contain.

Besides all these—seeds, fruits, roots, and green vegetables—among the miscellaneous vegetable substances available as food for the evolving man were *mushrooms*, *seaweed*, the *bark* of certain trees, and *gum*.

Contrasting the uncultivated vegetable foods with the corresponding cultivated varieties we find that the former differ from the latter chiefly in containing a larger proportion and denser kind of cellulose, and in being less palatable owing to the presence of bitter and acrid principles, the chief objects aimed at in the cultivation of vegetable foods having been to diminish the cellulose and the disagreeable ingredients and to increase the proportion of starch, sugar, proteids, and fats. Other things being equal those vegetable foods which contain the least amount of cellulose and the least dense varieties of it, and the smallest amount of bitter or acrid constituents, are the most nutritive and palatable and therefore the most eagerly sought after. This is an important principle as it explains how the evolving man gradually came to leave certain vegetable foods out of his dietary.

Another point regarding uncultivated vegetable foods on which it is necessary to insist is that they are by themselves totally inadequate to supply man's nutritive needs. Even our anthropoid and post-anthropoid or homo-simian ancestors could not subsist entirely on the vegetable food which nature provided for them. One is apt to picture early man as surrounded by luscious fruits and sweet-tasting seeds in profusion, as living in a veritable lotus-land of plenty, where a sufficiency of delicious food was to be had for the mere trouble of gathering it. But the reality was far otherwise, as is sufficiently proved by the fact that even now, in spite of their elaborate methods of preparing and thus increasing the nutritive value of their vegetable food, no existing race of men is capable of subsisting upon the products of the uncultivated vegetable kingdom alone. The popular belief to the contrary is perhaps in some measure due to the mistaken notion that fruits like the fig, date, and banana grow wild in abundance and constitute even in their wild state highly nutritious foods, whereas, as a matter of fact, they are, as supplied to our markets, the finished products of a cultivation the origin of which is lost in an unfathomable past, while in the wild state they are scarcely recognisable and practically inedible. The sugar-cane and cocoa-nut have similarly been brought to their present state of perfection by centuries of careful cultivation; wild, they furnish but a meagre supply of nutriment.

Animal Food.

As for the animal food of evolving man it may safely be said that animal food in any or every form was acceptable to him and his homo-simian ancestors prior to the cibicultural period. Some kinds would naturally be preferred before others, but there can be no doubt that, at any rate in times of dearth, all kinds were greedily devoured, from fish, birds, and birds' eggs, and every species of mammal, down to grubs, worms, snails, insects, caterpillars, frogs, lizards, snakes and shellfish.

Nor among his available foods must we forget to include *honey*, which has afforded a valuable source of nutriment from anthropoid times.

THE DIET EPOCHS.

In considering the changes which this primitive diet has undergone we shall find it convenient to divide man's dietetic career into epochs and periods. The following are those which I propose[1]:—

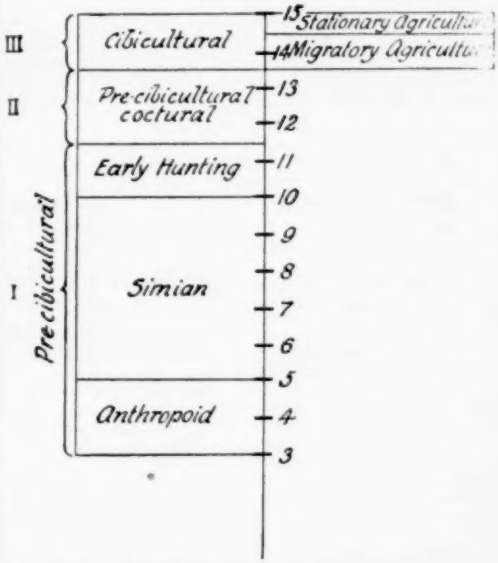
I. *The pre-coctural epoch.*—From the anthropoid stage to the discovery of cookery (3rd–11·5th grade).
- The anthropoid period (3rd–5th grade).
- The homo-simian period (5th–10th grade).
- The early hunting period (10th–11·5th grade).

II. *The pre-cibicultural coctural epoch.*—From the discovery of cookery to the introduction of agriculture and the breeding of animals for food (11·5th–13·5th grade).

III. *The cibicultural epoch.*—From the time man began to produce food artificially to the present day (13·5th–15th grade).
- The period of migratory agriculture.
- The period of stationary agriculture.
  - Early.
  - Late "age of pap."

The first, or pre-coctural epoch, extends from anthropoid times to the definite establishment of cookery, which I place at the 11·5th grade of evolution (see Fig. 3). This epoch

FIG. 3.



may be conveniently subdivided into three sub-epochs or periods: (*a*) The anthropoid period (corresponding to 3rd–5th grade of evolution); (*b*) the homo-simian or, more briefly, the "simian" period (corresponding to the 5th–10th grade), extending from the anthropoid stage until the time when artificial methods were first employed in hunting and fishing—when, i.e., we may suppose racial manhood to have been attained; and (*c*) the early, or pre-coctural, hunting period (corresponding to the 10th–11·5th grade), which embraces the period of hunting and fishing before man had begun to cook his food habitually.

The second, or coctural pre-cibicultural, epoch extends from the commencement of cookery as a routine practice till man began to increase his food-supply by cultivating plants and breeding animals, and corresponds, I suggest, to the 11·5th–13·5th grade of evolution. All existing pre-agriculturists are in this diet epoch.

The third, or cibicultural, epoch, which includes the present time, dates from the time man began to cultivate plants and breed animals for food, which I assume to have been at the 13·5th grade of evolution. So far as agriculture is concerned this period admits of subdivision into (*a*) the period of migratory agriculture and (*b*) the period of stationary agriculture, which may be further divided into an early and a late period, the latter being characterised by the fact that most of the farinaceous food is consumed in a soft, pappy state, for which reason it may not inappropriately be called the "age of pap."

It may, perhaps, appear more accurate to speak of diet *stages* rather than *epochs*, inasmuch as the various peoples of the world have not advanced at equal rates in regard to their diet any more than they have in other respects. There has, i.e., been a considerable overlapping of the diet epochs, some communities having lagged behind others. Thus, while all civilised peoples have reached the last diet stage—that of stationary agriculture—others, e.g., many negro tribes, still remain in the migratory stage, and others again, e.g., the Australian aborigines, even in the pre-cibicultural stage. If, however, we agree to take as the beginning of each epoch the time at which the dietetic customs characteristic of it first began the term "diet epoch" will have a definite chronological meaning.

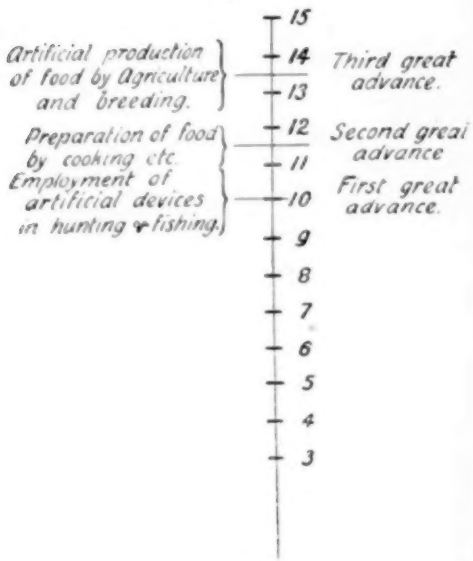
It is, of course, impossible to state with any degree of

[1] A word as to nomenclature. Nothing better shows the neglect hitherto of our present line of inquiry than the circumstance that ready-made terms are not to hand. I have employed "coctural" for "cooking" and "cibicultural" for "relating to food-culture." *Coctura* is employed by Columella, who lived in the first century A.D., to denote both the act of cooking and the thing cooked. From it we may derive *coctural*, which is a convenient, if not very elegant, term. The *cibi* in cibicultural is formed by taking the genitive of cibus on the same principle as *placi* and *horti* in placicultural and horticultural, the *s* of placis in the former case being omitted for euphony.

exactness the dates of these various diet epochs and periods and the evolution grades to which they severally correspond, to say, e.g., how many years ago the hunting stage began and what evolution grade had then been reached. I have had to surmise much and doubtless many of my surmises are wide of the mark—thus it is not unlikely that the coctural epoch started before the 11·5th grade—but they may help to give clearness and definition to the otherwise blurred picture of man's dietetic evolution and their conjectural character may perhaps serve to stimulate inquiry.

Taking, now, a general survey it will be seen that the dietetic career of the evolving man from homo-simian times onwards has been characterised by three great advances, with each of which his supply of food has been greatly augmented. (Fig. 4.) The first advance was made when the

FIG. 4.



genuine hunting and fishing stage was entered upon, when man began, i.e., to employ artificial aids in capturing his animal food, and thus came greatly to increase its supply and to be correspondingly less dependent upon vegetable food: until he had invented these he must have been unable, except by lucky chance, to procure any of the larger game and only a very limited quantity of fish. The second advance came when he began to subject his vegetable food to artificial preparation, such as sun-drying, grinding, maceration, burying, and, above all, cookery; this led to a considerable increase in his supply of vegetable food and opened the way to agriculture. The third great advance—preceded by the minor one which was made when he learnt to store his food, especially vegetable food, against seasons of dearth—consisted in the cultivation of plants and the breeding of animals for food; once he had fairly reached this step man in one bound increased his food-supply a thousandfold and was enabled to multiply and progress in a manner which had otherwise been quite impossible.

We will now briefly consider each diet epoch in its leading features, leaving their more complete consideration to future sections.

The anthropoid period.—During this period (3rd to 5th grade) our precursors resembled the present-day anthropoids and probably subsisted on much the same kind of diet as do the latter—i.e., on seeds and fruits, leaves and young shoots, and possibly also roots; and on such animal food as insects, grubs, caterpillars, frogs, lizards, snakes, birds, birds' eggs, and the smaller mammals; honey and gum were probably also consumed. Much of the vegetable food of this period was, by reason of the density and abundance of its cellulose constituents and its admixture with acrid and bitter principles, of a kind quite unsuitable to the needs of the evolving man in his coming phases.

The homo-simian period.—The next long period (5th to 10th grade) saw the simian pre-human struggle upwards from ape to man. He gradually spread over the Indo-African continent, leading, we may conjecture, a comparatively stationary, non-nomadic life, and subsisting chiefly upon raw vegetable food. As his intelligence increased, however, and with it the means of procuring animal food, he became less and less a vegetable feeder and more and more carnivorous, though he was not yet able to procure any but the smaller animals. But with this increase in the amount of animal food consumed he naturally came gradually to abandon and to lose the power of digesting the most indigestible and least palatable forms of vegetable food.

The pre-coctural hunting and fishing period.—This period (10th–11·5th grade) began when the evolving being first learnt to hunt and to fish in real earnest. This he could not do without the help of special weapons and devices: without weapons, traps, or dogs, how was it possible for him to destroy the larger game? He could not, like the carnivora, overcome his prey by sheer agility and strength; with man success in the hunt depends essentially upon intelligence, upon an intimate knowledge of the habits of his prey, and cunning in devising means of trapping, spearing, shooting, or otherwise overcoming it. How, again, without special devices, was it possible for him to secure any but small quantities of fish? While, therefore, there can be no doubt that the diet during the homo-simian period became increasingly animalised, it was not till the hunting and fishing period was fairly reached that the evolving being whom we may now suppose to have attained to the dignity of manhood—the invention of hunting implements surely constitutes a title to this distinction—became actually more carnivorous than vegetarian, and this in the proportion, I should judge, of about three to one. The effect of this large accession of animal food was to lead to a further abandonment of the least suitable kinds of vegetable food, with a corresponding loss in the power to digest them in the raw state. Another effect was that it enabled man to spread into regions which without hunting would not have provided him with sufficient food: we may, in fact, date the spread of man far and wide over the earth from the beginning of the hunting period, though it is quite possible that the general dispersal did not take place until man had learnt to prepare his vegetable food artificially and in this way greatly to increase its supply.

It should be observed in regard to these three pre-coctural periods—the anthropoid, homo-simian, and early hunting—that all the vegetable foods (save the luscious fruits which contain their saccharides in a soluble form) need very efficient mastication in order to break up their undigestible[1] cellulose framework and thus to liberate the contained starch, proteid, and fat. It is therefore evident that throughout these periods the masticatory apparatus of our early progenitors must have been put to ample work. The effect on the starchy portion of food of thorough mastication is worthy of note: it leads to its very thorough insalivation; and inasmuch as the intake of starch in those far-off times was comparatively limited this substance was for the most part digested into dextrines and maltose within the mouth, but little passing into the stomach as crude starch. It will thus be seen that until the discovery of cookery the stomach of the evolving man had very slight acquaintance with undigested starch, saccharide material entering it for the most part in the soluble form, either as grape sugar and fruit sugar, together with a small quantity of cane sugar (as in honey and luscious fruits) or as the products of salivary digestion—i.e., as dextrines and maltose.

The pre-cibicultural coctural period (the 11·5th–13th grade).—It is very probable that food was cooked in a desultory way long before this, for there is evidence of fire having been employed artificially in the miocene period.

We are happily able to give an accurate and not merely conjectural account of the dietetic features of this period, since certain peoples are living in it at the present day. I shall in due course give reasons for concluding that man first applied cookery to vegetable rather than

[1] The term "undigestible" is used as distinct from "indigestible."

animal food; in any case the importance of the discovery of cookery relates almost entirely to its effect on vegetable food. It does not seem improbable that before man learned to cook his vegetable food as a matter of routine he had already begun to prepare it in other ways, as by sun-drying, grinding, and burying, by which means its digestibility may in many cases be increased, and by maceration whereby poisonous and acrid ingredients may be got rid of. When he learnt to prepare his vegetable food in these various ways, but especially when he began actually to cook it systematically, he greatly augmented its supply, for there are many highly nutritious vegetable substances which in the unprepared state, either on account of the large amount of dense cellulose they contain or their admixture with obnoxious principles, are of little or no value to him as food, but which by cooking and other means can be converted into valuable nutriment. Hence, with the advance in the art of cookery—and it is suprising to what refinement it had attained in the latter part of this period—the supply of vegetable food steadily increased, and the hunter was to some extent relieved from the chase and more free to devote himself to other pursuits. This increase continued throughout the period under consideration until vegetable food came to constitute one half, or more, of the total dietary.

The chief effect of cooking on vegetable food being the breaking up of its cellulose frame-work and the liberation of the contained nutritive ingredients, cooking greatly aids the digestibility of all such vegetable substances as contain abundance of cellulose and at the same time it relieves the organs of mastication of much of their work; hence when man began to cook his vegetable foods he subjected them to less mastication than heretofore, with the consequence that the starchy ingredients were so much the less insalivated, and inasmuch as with the advent of the coctural period more starch was consumed than previously, it is clear that more of it now entered the stomach than had hitherto been the case.

The abandoning of, and the corresponding loss of power to digest in the raw state, the less digestible and palatable kinds of vegetable food which characterised the homosimian and early hunting periods went on with accelerated rate after man had once begun to subject his food to artificial preparation, until he came to depend less and less upon raw vegetable food and finally limited himself to the very easily digestible kinds.

A still more important effect of cookery was that it led the way to the next great dietetic advance—i.e., the artificial production of food by the cultivation of plants and the breeding of animals, without which a high degree of civilisation would scarcely have been possible. It is, no doubt, conceivable that man might have come to breed animals for food without having first discovered cookery, though that he would have done so to any great extent seems unlikely; but that agriculture would not have made great headway without cookery is certain, since much the most important objects of agriculture—i.e., the cereals and pulses, as well as most roots—need cooking. Most cultivated fruits, and some of them of high nutritive value, such as the fig, date, and banana, do not, it is true, require cooking, nor does the highly nutritive sugar cane; but valuable as these are as foods, it is at least doubtful whether an advanced civilisation could be attained by a community which depended upon them for its chief supply of vegetable food. They all contain an abundance of soluble saccharide, but, with the exception of the banana, are very poor in that most precious of all nutritive ingredients, proteid. Certainly no community, as Payne has shown, has ever attained to any high degree of civilisation which has not cultivated the richly nitrogenous cereals, and these there can be no doubt would never have been cultivated, any more than would the highly nitrogenous pulses which might conceivably have taken their place, had man remained ignorant of the art of cookery.

The cibicultural epoch began, say, some 80,000 years ago. One of the first advances in the direction of vegetable food culture was the storage of supplies to provide against seasons of dearth; a second was the protection and preserving of plants valuable as food. Both these agricultural foreshadowings are to be observed among the aboriginal Australian pre-agriculturists. Thus they store the bunya-bunya seeds in baskets underground and they have a practice of apportioning to certain families a certain number of the bunya trees which pass on as hereditary property to their children. Man had also learnt to preserve and store animal food—e.g., by drying and smoking—long before he began to breed animals for food. As to whether he cultivated plants or bred animals first is a question we need not discuss just now. In the New World he certainly cultivated plants first. In any case a great forward step was taken when man began to produce food artificially, when instead of having to search laboriously for fruits, roots, and seeds he took to cultivating them ready to his hand. He cultivated groves of cocoanut, fig, and date trees, and improved their fruits out of all recognition; he planted large fields of roots, such as the manioc, potato, and yam, and greatly increased their stores of nutriment; and instead of depending for his cereals upon the small seeds of wild grasses collected with infinite labour he diligently tended and promoted their growth and thus developed the noble maize, and still more noble wheat, of which he has eventually come to grow millions of acres. And in regard to the animal kingdom, not only did he learn in the course of time to increase his supply of fish by building vast fleets of fishing vessels to reap the illimitable harvest of the sea, but also in place of spending long hours in the hunt, which at best could yield but a very limited supply of animal food, he learnt to raise on his own account vast flocks and herds of oxen, sheep, goats, and pigs and to breed birds of many varieties. Yet the total effect of food culture has been to make man more vegetarian than carnivorous, inasmuch as the supply of vegetable food has been increased more than that of animal food.

So far as agriculture is concerned the period under consideration falls into two sub-periods: (1) the period of migratory agriculture, in which limited patches of virgin soil were planted and quickly abandoned for new ones; and (2) the period of stationary agriculture, when the ground was carefully tilled, broken up, manured, rolled, and irrigated. During the migratory stage, especially in its earlier part, man still remained a hunter, combining hunting and fishing with desultory agriculture. It is important to distinguish between these two periods, for so long as the human community was wandering and occupied almost entirely with the food quest substantial progress in culture was not possible. It was only when agriculture had become stationary—say some 30,000 years ago—and an abundance of highly nutritious vegetable food and in some cases artificially reared animal food also[4] had been secured by the labour of a limited section of the community, it was only when in this way a large amount of the total energy of the community was liberated and made available for other purposes than the food quest that a complex division of labour became possible. Then it was that civilisation began in real earnest and that the ancient glories of Mexico and Peru, Babylon and Egypt rose in the midst of a barbaric world.

Now we have seen that cookery led the way to agriculture and it may therefore, I think, fairly be claimed for it that it opened the road to all the subsequent great discoveries of man and may thus be regarded as one of his greatest.

The power of digesting raw vegetable foods, which had been steadily waning during the previous diet epochs, has still further declined during the agricultural epoch. Uncultivated vegetable foods have now been practically abandoned and, with the exception of the fruits, very few of the cultivated varieties are eaten in the raw state.

Another effect of agriculture has been greatly to increase the amount of crude starch entering the stomach. We have seen that before the discovery of cooking comparatively little undigested starch passed into this organ and that cookery by leading to an increase in the amount of starch ingested and by diminishing the work of mastication and consequently the completeness of buccal digestion led to an increase in the quantity of crude starch passing into the stomach. The introduction of agriculture operated still further in the same direction and augmented the supply of starch to an enormous extent. Within recent times, moreover, it has been the fashion to consume most of the starch in a soft, pappy, or pultaceous form, in the form, e.g., of boiled potatoes, refined bread, porridge, and puddings of various kinds, which readily pass into the stomach after little or no preliminary mastication and insalivation; so that, in striking contrast with what happened in the case of early man, the modern stomach is literally deluged with crude starch. This practice among moderns of consuming most of their starchy food in a soft form cannot be too strongly condemned. *(To be continued.)*

[4] That the artificial rearing of animals was not needful for the attainment of a high degree of civilisation is proved by the case of the ancient Mexicans.

A CHESHIRE COLONY FOR SANE EPILEPTICS.

ON Sept. 8th Mr. B. W. Levy, the David Lewis legatee, formally handed over to representative trustees the title-deeds of the Sandlebridge Colony for Epileptics, between Alderley Edge and Chilford. Mr. Levy handed the title-deeds to the Lord Mayor of Manchester and in the course of his remarks stated that Lord Egerton had consented to be the president of the institution. When the David Lewis Trust decided to establish the colony the experience of the system in England was of the slightest. He therefore visited some of the continental colonies and was so much impressed that he sent a deputation to visit them. The colony now erected was as complete as it could possibly be, "and the object they had in view had been to evolve a colony which would be an object-lesson and act as a guide to those forming similar institutions." The homes were not intended primarily for the pauper classes for whom the guardians of the poor were responsible. The Lord Mayor of Manchester having received the title-deeds expressed his pleasure as chief magistrate of the city in accepting the gift and said that Mr. Levy could not be thanked too much for what he had done. Sir W. H. Houldsworth, Bart., M.P., one of the trustees, in moving a vote of thanks to the Lord Mayor, also spoke of the munificent generosity of Mr. Levy, at the commencement of the trust he had placed £100,000 in their hands for Manchester and a similar sum for Liverpool. He trusted that the public would take care that the necessary funds were supplied for the proper maintenance of the institution. With the example of the well-considered and generous philanthropy of Mr. Levy before them, we may hope that Manchester will not fall short in the duty and privilege of insuring the success of this noble work.

The history of the colony is as follows. In September, 1892, in a paper read before the North-western Poor-law Conference at Chester, Dr. J. M. Rhodes gave expression to a feeling that no doubt existed in the minds of others that as regards any proper provision for sane epileptics England was remiss in her duty. His experience on the Chorlton board of guardians had shown how unhappy was the lot of the sane epileptic, associating as he had to do with the feeble-minded and insane, without provision for amusement or instruction and with the practical certainty that gradually increasing mental feebleness would reduce him to the level of the poor creatures around him. Happily, Dr. Rhodes's paper aroused public attention and in 1897 members of the Chorlton and Manchester asylums committee, including Dr. Rhodes, visited the chief epileptic colonies on the continent. Shortly afterwards, quite independently of the joint asylums committee, a provisional committee was formed with the view of establishing a colony in the Manchester district. This was not connected with the Poor-law but was an independent voluntary association. This committee collected about £8000 which sum was to be the nucleus of an endowment fund. It has now increased to about £14,000, which amount is, however, much too small, but it will grow, it is hoped, to at least £50,000. Application was next made to the Manchester committee of the David Lewis Trust for a grant from its fund. At first this was refused but after searching inquiry the trustees generously offered to provide land and buildings for the proposed colony, to furnish and to equip it, and to hand it over to the committee ready for occupation. When this decision was come to Mr. B. W. Levy himself, as mentioned above, visited some of the continental institutions and sent, moreover, a small commission of inquiry to visit various continental epileptic colonies. It consisted of Dr. Head, Mr. Alexander Graham, architect, and Mr. Levy's own secretary, and reported to him on the medical, architectural, and general aspects of these institutions. Alderman A. McDougall, Dr. Rhodes, and other members of the provisional committee, with the secretary, Mr. Marshall, also visited similar institutions on the continent and in the United States. "These institutions [in the United States] are surrounded by extensive grounds, with farms, workshops, and all that is required by way of healthy surroundings and internal equipment to secure, as far as possible, successful treatment for the unfortunate sufferers." The trustees after some difficulty acquired the Sandlebridge estate, "suitable as regards soil and surroundings." It may be interesting to know that it belonged to Lord Knutsford, whose father, the late Sir Henry Holland, so well known as a scholarly physician, inherited it from his father who lived greatly respected in Knutsford and had a large general practice extending over a wide area. About 130 acres of this estate are immediately available for the purposes of the colony and further land may be brought into use "should the needs or expansion of the colony require it." As the result of all the various inquiries "it was decided to form a colony on the lines of German establishments, with such adaptations and alterations as English climate and modes of life rendered desirable." The buildings consist of an administration block, three houses for men and three for women, each for 20 or 30 patients, a hospital and administration block, school house, chapel, recreation room, kitchen, laundry, farm buildings, and cottages for work-people, and so on. The total cost of land and buildings, together with the laying out of the grounds, electric and sanitary installations, and furnishing, has been over £100,000 and is expected to reach £120,000. The committee will be able to accommodate in the first instance about 200 patients. There is room now, however, for 250 and the hospital and kitchen have been arranged with the view of the number increasing to 500. During the first few years it is expected that there will be a deficiency of income of from £3000 to £4000 yearly. The patients will contribute to the cost of their maintenance at various rates and in years to come it is hoped that a tangible revenue will be derived from the produce of the farm, gardens, poultry yards, and the like, and this hope seems to be justified by the experience of the American institutions of the same character. The education there is such as will assist the epileptic to gain his daily bread. "We must recognise the fact that the epileptic is a more or less defective being," but "there is no reason why he should be a total burden to the State." "For him labour is a godsend and he should be taught how and where that labour can best be used." And the incurables who must always remain at the colony should be able to enjoy reading and to write home to their friends. Many trades and occupations are taught in these institutions besides farming. Thus in the Craig Colony in New York State there are a printing office, a blacksmith's shop, a carpenter's shop, a sewing room, a tailor's shop, and a shoe shop. It should be noted that six hours a day is the limit of work time. In some such ways will the profitable education at Sandlebridge be conducted. In the United States models, pictures, and the Sloyd system are much used. And in such institutions the quality and capacity of the brain have to be considered.

There can be no question that this epileptic colony will meet a great want in a wide district in an efficient manner and the committee, though it anticipates that the colony will in time be to a certain extent self-supporting, is justified in making an earnest appeal for substantial assistance at the outset of its career of usefulness. As previously stated, an effort is being made to raise an endowment fund of £50,000. Dr. Rhodes would double this, his view being that as the proportion of epileptics to the whole population is 1·5 per 1000 the sum of £100,000 is not too great. It must not be forgotten that there will be substantial gain to the community if the care and protection of the epileptics and feeble-minded are carried out in the country at large. The workhouses will be relieved. At present it appears that the only institutions of this kind in this country are at Maghull, near Liverpool, at Chalfont St. Peter in Buckinghamshire, the Countess of Meath's home at Godalming, and a home for pauper Roman Catholic children at Bishop Stortford. There is room for many more but as the law stands at present they must be left to voluntary effort. The county councils can provide for cases of mental disease, but in the eye of the law epilepsy is not a mental disease and cannot be dealt with till it has merged into insanity and the mischief has become complete and irremediable. How desirable it is that care and treatment should begin early is shown from the fact that the prospect of benefit, and even in some cases of cure, is so much the more likely. But even if incurable the epileptics will live under happier conditions than in the miserable homes from which many of them come. They will be saved from themselves and their own weaknesses and from the deteriorating moral and physical influences of the workhouse ward, where too often

the sane and the insane, the virtuous and the vicious, are equally hopeless and equally wretched. A great debt of gratitude is due to the David Lewis trustees for their generous and well-considered munificence. It is intended to make the Sandlebridge Colony one of the best of its kind and it may be hoped that it will be the precursor of others, each striving to come up to, or to surpass, it in usefulness.

The following is the list of the trustees:—Mr. B. W. Levy, Sir W. H. Houldsworth, Sir W. H. Mather, Mr. S. Levy, Mr. H. Philips, Mr. W. J. Crossley, the Lord Mayor of Manchester, the Mayor of Salford, Sir Frank Forbes Adam, Mr. H. Agnew, Mr. E. Tootal Broadhurst, Mr. E. Donner, Mr. S. L. Helm, Councillor J. Royle, and Mr. G. Combes. The deed provided that the trustees should never number more than 20. The following form the committee of management:—Mr. R. Armistead, Mr. E. Aston, Mr. A. Crewdson, Colonel Dixon, Mr. James Hall, Mr. S. L. Helm, Sir Bosdin T. Leech, Mr. Eliot S. Levy, Mr. E. G. Leycester, Alderman M'Dougall, Mr. John Royle, Alderman J. Milson Rhodes, Mr. John Shillito, Mr. Charles H. Scott, and Mr. Charles E. Thornycroft. Mr. S. L. Helm is the treasurer.

ASYLUM REPORTS.

Warwick County Asylum (Annual Report for 1903).—The average number of patients resident during the year was 979, comprising 422 males and 557 females. The admissions during the year amounted to 239—viz., 111 males and 128 females. Of these, 199 were first admissions. Dr. Alfred Miller, the medical superintendent, states in his report that "the general health of those cases admitted was decidedly bad, many being in a very debilitated state. More especially was this noticeable among the females. Our infirmary wards have been crowded owing to this fact and the amount of extra diet issued has been far greater than in previous years." Intemperance in drink was found to exist in 50 of the admissions. The number of cases discharged as recovered during the year amounted to 73—viz., 32 males and 41 females, or 7·5 per cent. of the average number resident. The deaths during the year amounted to 105, or 10·7 per cent., as calculated on the same basis. Of the deaths, five were due to pneumonia, six each were due to cardiac disease and senile decay, ten to epilepsy, 11 to general paralysis, 14 to cerebral hæmorrhage, 17 to pulmonary and other forms of tuberculosis, and the rest to other causes. The male patients have, as a rule, enjoyed good health, but on the female side of the asylum there has been a great deal of illness, including an epidemic of diarrhœa. About 60 patients were attacked and of these two died. "There has been a good deal of discussion," says Dr. Miller, "concerning accommodation for idiot and imbecile children certifiable under the Lunacy Act. ..... I am sure that these cases are not suitable for the wards of a county asylum. ..... I trust that the asylum authorities in the Midlands will combine for the purpose of providing accommodation for the idiot and imbecile children at present in the wards of the county asylums. Personally, I would prefer to see these patients classified and living in small numbers, somewhat on the lines of cottage homes. Under these circumstances classification would be an easy matter, and those capable of receiving instruction and deriving benefit from special treatment would thereby obtain the best opportunities for doing so." A new building for private patients has been recently opened and is expected to prove useful "for a class of patients for whom practically no suitable accommodation exists in the country." The ventilation of the asylum has been entirely remodelled but on the existing lines. Before the end of the year 1904 it is expected that all the wards in the asylum will be plastered and refloored. The Commissioners in Lunacy state in their report that the condition of the patients was satisfactory and that they looked well-cared for, that they seemed contented and had no complaints to make, that the wards were bright and well ventilated, and that the medical case-books and records were efficiently kept. The committee of management states in its report that a contract has been entered into for the enlargement of the asylum in accordance with the plans which have been approved by the council for the sum of £6950.

Lanark District Asylum (Report for the Year ending May 15th, 1904).—The average number of patients resident during the year was 877, comprising 446 males and 431 females. The admissions during the year amounted to 223—viz., 120 males and 103 females. Of these 129 were first admissions. Dr. Neil T. Kerr, the medical superintendent, states in his report that the number of private patients admitted during the year was again large "and showed the need that existed of granting to district asylums the privilege of admitting private patients at a low rate of board, as has already been granted to English county asylums. There are many people in a good social position who frequently find it difficult to pay the higher rate at a private or royal asylum if the relative's illness is likely to be of long duration." The condition of many of the patients, mental and physical, was very unsatisfactory; "indeed," adds Dr. Kerr, "many were hopeless from the very first." Eight were admitted over 70 years of age. It was a matter of regret that so many patients were certified because of the brain failure that accompanied old age, for the accumulation of such senile cases had much to do with the apparent increase of insanity. The admissions also included seven cases of congenital mental deficiency, five cases of epilepsy, 11 of general paralysis, and 24 who had attempted suicide prior to admission. Of the causes of insanity hereditary predisposition and alcoholic intemperance were the principal ones. The number of patients discharged as recovered during the year amounted to 92—viz., 61 males and 31 females—or 10·5 per cent. of the average number resident. The deaths during the year amounted to 73, or 8·3 per cent. as calculated on the same basis. Of the deaths one was due to renal disease, five were due to general paralysis, six to cerebral hæmorrhage, eight to pulmonary and other forms of tuberculosis, 12 to pneumonia and broncho-pneumonia, 19 to cardiac disease, and the rest to other causes. During the winter there was much illness, chiefly influenza, which affected both patients and officials. "It was the most severe epidemic we have had since the asylum was opened and it caused the death of a large number of patients, mostly old and chronic cases who had no reserve [strength] to withstand the virulence of the attack. The disease first of all assumed the gastro-intestinal type; after a time this type gradually abated and lung complications then became most prevalent." The Commissioners in Lunacy state that the meals were excellently cooked and the amount of food was ample for the requirements of the patients. The patients were neat and well dressed, their general behaviour was quiet and proper, the asylum was found to be in excellent order throughout, the wards and dormitories were scrupulously clean and properly heated and ventilated, and the medical case-books were correctly and well kept. The committee of management states in its report that additions and improvements have been made to the dining rooms of the male and female attendants and that a system of electrical fire alarm has been introduced which gives exact information at the central fire station as to the block and the position of a fire.

Joint Counties Asylum, Carmarthen (Annual Report for 1903).—The average number of patients resident during the year was 647, comprising 321 males and 326 females. The admissions during the year amounted to 177—viz., 103 males and 74 females. Of these 160 were first admissions. Dr. Edwin Goodall, the medical superintendent, states in his report that in 65 of the admissions there was ascertained a history of insanity or allied mental disorder in the parents. Shock, trouble, and worry were present as exciting causes in 31 cases. Alcohol was assigned as the cause of insanity in 20 cases, or 13·4 per cent., "a lower proportion than usual. A low proportion [of alcoholic insanity] was also noted last year." Among the admissions special reference is made to the case of a father with his two daughters, all received together. "Such cases of so-called 'communicated insanity' are rarely seen. The circumstances predisposing to their development existed in this instance; neurotic degeneration in the family, lonely surroundings, unusual anxiety, stress of mind among those attacked, and a terrifying suddenness of onset in the first case. Another curious feature was that death occurred in the same way and from the same cause in two of the cases." Of the admissions 33 were actively suicidal and 22 were dangerous. 89 cases, or 60 per cent. of the admissions, were attacked with insanity for the first time, which was in itself a favourable circumstance from the point of view of treatment of about 50 cases, since these were admitted to the asylum within three months of the attack. In the previous year's report reference was made to a patient admitted for the fifth time in consequence of excess in drink.

"Two other such cases," adds Dr. Goodall, "have occurred this year. Such persons in the interests of the community and of themselves should be kept for a prolonged period, or permanently if desirable, in an inebriate reformatory. Even when they happen to be suitable cases for an asylum they cannot be detained in such an institution, for legal reasons, for a sufficient period. This method of dealing with such cases is expensive and inefficient and ought to be done away with. ..... It is high time that reformatories in sufficient number were forthcoming, high time also that the powers of the law in regard to compulsory committal of chronic inebriates were enlarged." The number of cases discharged as recovered during the year amounted to 44—viz., 19 males and 25 females, or 6·8 per cent. of the average number resident. The deaths during the year amounted to 65, or 10 per cent. as calculated on the same basis. Of the deaths two were due to senile decay, three to cardiac disease, five to renal disease, six each to epilepsy and pneumonia, eight to general paralysis of the insane, 15 to pulmonary and other forms of tuberculosis, and the rest to other causes. The Commissioners in Lunacy state in their report that the day-rooms and dormitories were bright, cheerful, and in good order, that the dietary was of good quality, and that the medical case-books were well and carefully kept. The committee of management states in its report that the charge for the maintenance of patients is 9*s.* 0½*d.* per head per week. The committee has in preparation, by the medical superintendent, a report of a scheme for superannuation of the officials and servants in the asylum service which it is expected will come immediately before the committee for consideration.

County and City of Worcester Asylum (Annual Report for 1903).—The average number of patients resident during the year was 1163, comprising 527 males and 636 females. The admissions during the year amounted to 221—viz., 99 males and 122 females. Of these, 182 were first admissions. Mr. G. M. P. Braine-Hartnell, the medical superintendent, states in his report that hereditary and family predisposition to insanity was the cause in 26·6 per cent. of the admissions, while intemperance in drink was the cause in 15·3 per cent. Of the 221 admissions 201 were in bad or indifferent health with exhausted or reduced bodily condition. The number of patients discharged as recovered during the year amounted to 104—viz., 39 males and 65 females, or 8·9 per cent. of the average number resident. The deaths during the year amounted to 94, or 8·08 per cent. as calculated on the same basis. Of the deaths five were due to cardiac disease, six each to epilepsy and general paralysis, 11 to colitis, 20 to senile decay, 21 to pulmonary tuberculosis, and the rest to other causes. An inquest was held during the year on the death of a patient due to hæmorrhage from rupture of the œsophagus caused by a piece of bone. "The patient had tried to swallow a part of a rib of beef measuring four and a half inches by one and a quarter inches. This got impacted in the œsophagus, causing rupture of the muscle. He complained of no pain and took his food without any discomfort." With the exception of the above case no other accidents during the year were fatal. Four patients escaped and were all recaptured in a short space of time. During the year four nurses and seven female and five male patients were attacked with scarlet fever, there being two deaths. Dysentery was present throughout the year. External iron staircases have been provided in several wards as additional exits in case of fire. "All the exit doors are regularly and frequently opened and the patients exercised in the use of the staircase. 14 of the external doors which opened inwards have been altered to open outwards." Electrical communication has been made from each ward to the porter's room for use in case of fire. The Commissioners in Lunacy state in their report that the rooms and dormitories were clean and in good order as were also the beds and bedding, that the dress of the patients was neat and varied, that there were no complaints as to their treatment, that the meals served were of a substantial character, and that the medical case-books were carefully and intelligently kept. Though the general health of the patients appeared to be good the Commissioners regard the sanitary condition of the asylum as open to improvement owing to the number of cases of scarlet fever, dysentery, and measles that have occurred during the year. The committee of management states that it has been compelled to raise the rate of maintenance for patients to 8*s.* 5½*d.* per head per week.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On Reinspection of the Borough of Whitehaven and on recent administration therein, by Dr. R. FARRAR.[1]—This report gives an account of an inspection made to ascertain the work of the town council of Whitehaven since that borough was inspected in detail by Dr. H. T. Bulstrode in July, 1902. Dr. Bulstrode's report was of interest from the discussion given to various aspects of the housing question. In the eighteenth century Whitehaven was a well laid-out town with wide streets and well-built houses, having each a strip of garden of the width of the house at the back. When owing to the development of collieries the town increased in population and it was found impossible to obtain land for building from the lord of the manor outside the limits of the town owners of house property ran up blocks of back-to-back houses in what originally were gardens. Later the interstices between these blocks and original houses were filled up with smaller tenements, wedged in wherever room could be found. The houses in the courts thus formed are without any proper supply of air or light and in various other respects are objectionable. Dr. Bulstrode was obliged to report that in many cases nothing short of their demolition would suffice to remedy the unhealthy conditions which obtained in the town. Since his report in 1902 the town council has effected an important number of sanitary reforms in various directions for which it deserves credit. But it has so far done little to deal effectively with the main question of better houses. What effort has been made has rather tended to perpetuate the objectionable conditions which the presence of many of the courts makes inevitable. Dr. Farrar now advises the provision by the local authority of a number of cottages of appropriate construction outside Whitehaven and the demolition of a corresponding number of "slum houses" in the centre of the town. This recommendation admittedly deals with only a portion of the difficulty but it is obvious that a large scheme of demolition and new building would involve a much larger expenditure than Whitehaven could afford. Dr. Farrar urges, however, that much good might be done by the judicious selection of even a small number of houses for demolition under the Housing of the Working Classes Act. Dwelling accommodation would need to be provided for the persons displaced and Dr. Farrar suggests that this might be done by the coöperation of the town council and the local colliery company, many of whose workmen at present live in the unhealthy slums of the town.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Price 2*d.*

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8544 births and 5118 deaths were registered during the week ending Sept. 10th. The annual rate of mortality in these towns, which had been 22·7, 20·5, and 18·2 per 1000 in the three preceding weeks, further declined last week to 17·5 per 1000. In London the death-rate was 15·2 per 1000, while it averaged 18·5 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 5·1 in Hornsey, 8·3 in Willesden, 8·6 in Smethwick, 9·4 in King's Norton, 9·6 in Handsworth (Staffs.), 11·7 in Walthamstow, and 12·8 in West Hartlepool; while the highest rates were 24·7 in Liverpool, 25·0 in Rotherham, 25·3 in St. Helens, 26·5 in Tynemouth, 28·4 in Plymouth, 29·9 in Wigan, 31·8 in Hanley, and 33·0 in Great Yarmouth. The 5118 deaths last week included 1512 which were referred to the principal infectious diseases, against 2841, 2291, and 1636 in the three preceding weeks; of these 1512 deaths, 1258 resulted from diarrhœa, 64 from whooping-cough, 63 from diphtheria, 53 from measles, 47 from "fever" (principally enteric), 23 from scarlet fever, and four from small-pox. No deaths from any of these diseases was registered last week in King's Norton; among the other towns they caused

the lowest death-rates in Hornsey, Hastings, Brighton, Norwich, Handsworth (Staffs.), Smethwick, Bury, Halifax, and Newport (Mon.); and the highest rates in Portsmouth, Great Yarmouth, Plymouth, Hanley, Stockport, Liverpool, Bootle, Wigan, and Burnley. The greatest proportional mortality from measles occurred in Plymouth, Walsall, and Stockport; from diphtheria in Hanley, Bootle, Bradford, and West Hartlepool; from whooping-cough in Great Yarmouth, West Bromwich, and Stockport; from "fever" in Aston Manor; and from diarrhœa in Great Yarmouth, Plymouth, Hanley, Grimsby, Liverpool, Bootle, Wigan, Burnley, Preston, and Hull. The mortality from scarlet fever showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Salford, one in Manchester, and one in Newcastle-on-Tyne, but none in any other of the 76 towns. The number of small-pox cases in the Metropolitan Asylums Hospitals, which had been 18, 13, and nine on the three preceding Saturdays, had further declined to eight on Saturday last, Sept. 10th; two new cases were admitted during the week, against two, none, and two in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 1745, 1781, and 1819 at the end of the three preceding weeks, had declined again to 1816 at the end of last week; 234 new cases were admitted during the week, against 198, 263, and 266 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 106, 101, and 108 in the three preceding weeks, further rose last week to 129 and were six above the number in the corresponding period of last year. The causes of 48, or 0·9 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Hull, Newcastle-on-Tyne, Cardiff, and in 46 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, St. Helens, Manchester, Preston, Sheffield, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 15·7, 16·2, and 16·0 per 1000 in the three preceding weeks, further declined to 15·7 per 1000 during the week ending Sept. 10th, and was 1·8 per 1000 below the mean rate during the same period in the 76 large English towns. Among these Scotch towns the death-rates ranged from 9·7 in Leith and 14·0 in Edinburgh to 18·7 in Greenock and 20·0 in Perth. The 519 deaths in these towns included 52 which were referred to diarrhœa, 17 to whooping-cough, five to measles, five to diphtheria, five to "fever," and two to scarlet fever, but not any to small-pox. In all, 86 deaths resulted from these principal infectious diseases last week, against 94, 97, and 100 in the three preceding weeks. These 86 deaths were equal to an annual rate of 2·6 per 1000, the death-rate last week from the same diseases in the 76 large English towns being 5·2 per 1000. The fatal cases of diarrhœa, which had been 66, 56, and 58 in the three preceding weeks, declined again last week to 52, of which 22 occurred in Glasgow, nine in Dundee, seven in Edinburgh, seven in Paisley, four in Greenock, and three in Aberdeen. The deaths from whooping-cough, which had been 16, 24, and 26, declined again to 17 last week and included nine in Glasgow, three in Edinburgh, two in Dundee, and two in Greenock. The fatal cases of measles, which had been ten and four in the two preceding weeks, rose again last week to five, of which four were registered in Glasgow. The deaths from diphtheria, which had been one, one, and four in the three preceding weeks, further rose to five last week, and included two in Glasgow and two in Edinburgh. The fatal cases of "fever," which had been two and six in the two preceding weeks, declined again last week to five, of which two belonged to Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 47, 55, and 53 in the three preceding weeks, rose again last week to 58 and were slightly in excess of the number in the corresponding period of last year. The causes of 16, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 24·5, 23·5, and 19·9 per 1000 in the three preceding weeks, rose again to 20·8 per 1000 during the week ending Sept. 10th. During the past four weeks the death-rate has averaged 22·2 per 1000, the rates during the same period being 18·0 in London and 14·4 in Edinburgh. The 151 deaths of persons belonging to Dublin registered during the week under notice were six in excess of the number in the preceding week and included 32 which were referred to the principal infectious diseases, against 43, 49, and 29 in the three preceding weeks; of these, 26 resulted from diarrhœa, four from whooping-cough, one from measles, and one from "fever," but not any from small-pox, scarlet fever, or diphtheria. These 32 deaths were equal to an annual rate of 4·4 per 1000, the rates during the same period from the principal infectious diseases being 3·5 in London and 2·2 in Edinburgh. The fatal cases of diarrhœa, which had been 33, 35, and 26 in the three preceding weeks, were again 26 last week. The deaths from whooping-cough, which had been three, four, and one in the three preceding weeks, increased again last week to four. The 151 deaths in Dublin last week included 51 of children under one year of age and 34 of persons aged 60 years and upwards; the deaths of infants corresponded with the number in the preceding week, while those of elderly persons showed a slight increase. One inquest case was registered but no death from violence was recorded; 48, or nearly one-third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths registered in Dublin last week were not certified.

Looking Back.

FROM

THE LANCET, *SATURDAY*, SEPT. 16, 1826.

THE ZOOLOGICAL SOCIETY.

THERE are some departments of science in which our continental neighbours have made much greater progress than ourselves; and, singularly enough, this has happened more particularly in a certain branch, in which, from our local and commercial advantages, we ought to have been the precursors.

Zoology, which, as a matter of study, offers peculiar attractions, as illustrating the most interesting series of Nature's laws, and as connected with the history of almost an infinity of beings subservient to the support and comfort of mankind, has received in England, until very lately, no public encouragement; whilst in Germany, in France, and even in lazy Italy, it has been fostered by their respective governments with a liberality which does them honour.

We are glad to see that an Institution has at length been formed in this country for the prosecution of so interesting and useful a branch of study, and hope that it will receive that patronage which it deserves from an enlightened, and more especially from the medical public.

At present the Zoological Society is the offspring of a union of individuals, and has received as yet no support from the government; which has usually shown itself ready to follow, never to lead, the public opinion. Previously to the meeting in April last, nearly three hundred persons had signified their intention of becoming members, and among these were names distinguished in science, rank, and affluence. Since that period, about a hundred additional names have been subscribed, and the interest excited in favour of the Society, appears to be still on the increase. A house has been taken in the most central part of western London, which is now preparing for the reception of the collections already placed at its disposal; and it is expected, that in a short time nearly two thousand species of the mammalia and birds, a number exceeding that in the British Museum, will be ready for exhibition. But the views of the Society extend beyond the preservation of the stuffed skins and lifeless bodies; they embrace the maintenance of living animals. Ground has been obtained for this purpose in Regent's Park, in which aviaries and enclosures of various kinds are to be formed; and a treaty has been entered into with the proprietor of the most extensive collection of living animals in the metropolis for its transfer there as soon as the necessary buildings have been completed. To this collection the members of the Society will have access as a matter of right.[1]

[1] Excerpts from editorial observations.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is announced:—Fleet Surgeon S. W. Vasey to the *Defiance*.

Fleet Surgeon John Henry Thomas has been placed on the Retired List at his own request.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel P. M. Ellis to be Colonel, vice R. Blood, M.D., retired.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Aberdeen Company: Major J. S. Riddell to command under paragraph 55A Volunteer Regulations.

HONOURABLE ARTILLERY COMPANY OF LONDON.

Surgeon-Major T. E. F. McGeagh resigns his commission, with permission to retain his rank and to wear the prescribed uniform, and retires into the Veteran Company. John Francis Taylor to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Forfarshire: Surgeon-Lieutenant W. A. Taylor to be Surgeon-Captain.

Rifle: 2nd Volunteer Battalion the King's Own (Royal Lancaster Regiment): Surgeon-Lieutenant B. W. Hogarth to be Surgeon-Captain. 3rd Volunteer Battalion the Cheshire Regiment: Surgeon-Lieutenant T. A. Rothwell to be Surgeon-Captain. 3rd (Sunderland) Volunteer Battalion the Durham Light Infantry: William Byron Milbanke to be Surgeon-Lieutenant.

The King has been graciously pleased to approve of the Bearer Company of the Lancaster and Border Volunteer Infantry Brigade being formed into an independent unit, to be designated the "Lancaster and Border Bearer Company, Royal Army Medical Corps (Volunteers)."

PULMONARY TUBERCULOSIS IN THE ARMY.

According to a recent order of Lord Kitchener, the Commander-in-Chief in India, all soldiers of the British Army serving in his lordship's command who are suffering from pulmonary phthisis are in future to be invalided home at once instead of being treated, as has hitherto been the case, at the local sick quarters and hospitals throughout his command. In consequence of this order the Indian mail steamer *Arabia*, which arrived at Plymouth on Sept. 11th, brought home 22 of such military invalids from Bombay. It goes without saying that the medical authorities in India might, if only in the interest of the sufferers, have to retain a few phthisical patients who, however desirous they themselves were of encountering any risk in order to get home, might yet be so manifestly unfit to undertake the journey that it would be cruel to let them make the attempt. Patients suffering from pulmonary consumption do not, as a rule, progress favourably in such a hot and enervating climate as that of India and there is no reason therefore, even apart from the fact that they only serve to swell the sick and inefficient list, why they should be retained there for treatment. They would, on the contrary, probably do better in this country, but we think that, speaking generally, care should nevertheless be taken in regard to the selection of such patients, as well as in taking advantage of the best season for sending them home, in order to avoid their landing in this country in midwinter or at the beginning of the cold weather, with its discomforts and risk of the patients contracting inflammatory lung complications. With our more precise knowledge of the causes of this disease and its modern systems of treatment, both prophylactic and curative, broadly based on hygienic principles we have made a great stride in advance. So far as we know, no separate provision has been yet made, however, in the army for the special accommodation and treatment of these cases in all their stages in accordance with existing views but such provision will have to be made. In the meantime there are many newly constructed army hospitals to be found, in the Isle of Wight, for example, and elsewhere, which, in point of climate, open and healthy sites, accommodation, and appliances, are well adapted and might be utilised for this and similar purposes. It seems a pity that the advantages which they offer should be restricted to the relatively small number of sick labouring under ordinary and often trivial ailments drawn from the troops in their immediate locality. There seems to be no reason why cases of phthisis should not obtain in such places all the benefits of isolation and open-air treatment, while soldiers convalescing from other diseases might, with proper precautions, reap the advantage of all the air and sunshine obtainable in this country.

DEATHS IN THE SERVICES.

Surgeon-General James Jameson, M.D. Glasg., C.B., honorary surgeon to the King, late Director-General of the Army Medical Service, at Newlands, Eltham, on Sept. 13th, aged 67 years. Surgeon-General Jameson graduated as M.D. at the University of Glasgow in 1857 and entered the army as assistant surgeon in November of that year. He was Director-General of the Army Medical Service from May, 1896, to September, 1901, when he was succeeded by Surgeon-General Sir William Taylor, K.C.B. It was during Surgeon-General Jameson's tenure of office that the Royal Army Medical Corps was constituted.

Surgeon-Major John Campbell, C.B., late of the Indian Army, at his residence, The Quarry, East Looe, Cornwall, on August 26th, in his eighty-seventh year. The deceased was born at Looe on April 27th, 1817, being the youngest son of Captain Thomas Campbell, R.N. He entered the Indian Army as a medical officer and during the first Afghan war in 1841 he served with the troops marching from Jerezepore towards Cabul. He was with Wylder's Brigade at Peshawar and in its ineffectual attempt to force the Khyber Pass and to join General Sele, who was at Jellallabad. He was also with the army under General Pollock which marched through the Khyber Pass to Cabul. During the suppression of the Indian Mutiny he was again actively employed and for his services at the siege of the Residency at Lucknow was created C.B. in November, 1858. He retired from the service in 1864 and took up his residence at Looe, where he soon became extremely popular owing to his many acts of kindness.

ARMY REFORM.

We seem to be as far off as ever from reaching any really large, effective, and satisfactory measure of army reorganisation and reform. The more the present War Minister's proposals in this direction are scrutinised and considered the greater seems to be the growth of misgiving in regard to them. That the new scheme embodies many sound and excellent principles is admitted but further and fuller explanations and details are required. The recruiting question lies at the root of the problem and there is no well-grounded assurance that this has yet been solved. It must be allowed that we were able during the late war in South Africa to put a large force in the field in a relatively short space of time, but it seems doubtful whether the newly proposed "striking force" to be kept ready for war purposes is sufficiently large for the object in view and the question arises as to how it is to be kept up during war. With no representative of the medical and sanitary needs of the army on the Army Council it is difficult to see how they are to be satisfactorily dealt with, and to lower the age of young soldiers intended for service in India below what it is now appears to be, as we have previously said, a retrograde step in army hygiene.

THE WAR IN THE FAR EAST.

At the moment of writing there is a temporary lull in the warlike operations in the Far East owing to various causes. The belligerents of both sides are exhausted by the very hard and almost continuous fighting which has been taking place, by the hardships, want of food, and fatiguing marches which the troops have had to encounter, well-nigh rendering further efforts on their part a physical impossibility, and by the reappearance also of torrential rains making the roads impassable for transport. Both armies are simply worn out by their terrible exertions, but no pause is, nevertheless, taking place in the hurrying up of strong reinforcements in order to renew the encounters at the earliest opportunity. Although General Kuropatkin has been unable to ward off the very heavy blow which has been struck at the prestige of his country he has succeeded in maintaining, and even in adding to, his military reputation by his masterly if terrible retreat from Liaoyang. The main facts regarding the object, nature, and extent of the fighting in and around Liaoyang have now been made sufficiently clear to enable us to form a fairly accurate idea of what has taken place. If the Japanese have failed in securing the great object which they had in view they have nevertheless defeated and caused the retreat of the Russians

from an extremely strong and commanding position. And if General Kuroki's army after the severe fighting at Hai-yen-tai—which was the Spion-Kop of the operations—was too exhausted to follow up and "to head off" the enemy before reaching Mukden it still remains to be seen whether this cannot be done somewhere beyond that position. As regards the casualties on the two sides there is, as might be expected, some difficulty in forming a correct estimate, but there can be no doubt that they were very heavy on both sides. The difference, it must be remembered, of a single day in collecting the returns of the casualties will cause an important difference in the sum of the number wounded on a given occasion. The Japanese official estimate of their total casualties in the Liaoyang fighting amounts to 17,539, and they state that they buried over 3000 Russians on that occasion and that over 10,000 killed and wounded are estimated to have been sent off by train. The Russian official estimate of their losses at Liaoyang is practically given as about the same as the Japanese—that is to say, over 17,000, including 4000 killed. But there can be no doubt that it was much larger than this (probably over 25,000 from the day of the evacuation of Anshanchan to the fall of Liaoyang). Unofficial estimates at St. Petersburg put the Russian losses in and around Liaoyang and during the retreat to Mukden as even reaching 40,000. Those who are desirous of ascertaining the numbers and proportions of killed, wounded, and missing in various battles will find a good deal of information thereon in Longmore's "Gunshot Injuries" (Longmans, Green, and Co., 1895) and in his treatise on "Ambulance Transport" published by the War Office. From all that we read and hear it seems clear that not only must the belligerent armies in the field have been exposed to great hardships, excessive toil, wet, and famine, but from the fact that the number of sick and wounded was so great these must have undergone a very lamentable time of neglect and suffering. We hear but little of the sickness on either side. This must in the circumstances be considerable. It is stated that the Japanese troops besieging Port Arthur have many cases of beri-beri among them. Despite the very best efforts of medical administration it is simply impossible to deal promptly with such overwhelming conditions as have of late presented themselves. It is not surprising to learn, therefore, that the scenes on the battle-fields were often appalling. The Japanese Red Cross Society, which has usually worked in an admirable way, proved unequal to the unprecedented strain put upon it and many of the wounded succumbed for lack of timely attention. With the Russians conditions are stated to have been infinitely worse. The medical missionaries in Manchuria are assisting the surgeons in the hospitals of both belligerents. All the Russian sick and wounded are reported to have been sent north from Mukden. The troops are distributed in positions around the town.

The siege of Port Arthur is proving a far harder task than had been anticipated. Its fall would liberate a large Japanese force for taking part in the field operations elsewhere. Unhappily, there does not appear to be any near prospect of an end to the war. Both sides are making stupendous efforts to carry it on and there are no present hopes that any attempts at mediation would be of any avail.

Correspondence.

"Audi alteram partem."

THE NATURE AND ETIOLOGY OF CANCER.

To the Editors of THE LANCET.

SIRS,—In your leading article on the Nature and Etiology of Cancer in THE LANCET of August 13th, p. 473, you say: "Let those who in future essay to advance our knowledge of cancer regard it as their first duty to add *new facts* to those long known." I agree with Mr. T. W. Nunn in hoping that the remarks you have made on this subject may induce medical men to see the importance of inquiring into and recording actual facts rather than formulating new theories of which we already have a superabundance. In my opinion a most important point for further investigation is the relationship between tubercle and cancer. I hold most strongly that in every case of cancer careful inquiries should be made into the family history of consumption.

Roger Williams was, I believe, the first to draw attention to this point, for which sufficient credit has not been given him. In his book on "Diseases of the Breast, with special reference to Cancer," he remarks: "No hereditary condition is more favourable to the development of cancer than that which predisposes to and accompanies tubercle." Amongst his cases of mammary cancer he found there was a family history of consumption in 55 per cent. I found it in 39 per cent. of my own. As 19 per cent. may be taken as the average of a family history of consumption amongst the general community it is evident that as far as our two sets of statistics go, the proportion is much increased in cases of mammary cancer. In addition to the case mentioned in my book where a youth, aged 23 years, who had lupus of the face and nose, developed an epithelioma of the upper lip after being subjected to the x rays for three occasions only, I notice that in THE LANCET of June 11th, p. 1659, Dr. Norman Walker at a meeting of the Edinburgh Medico-Chirurgical Society reports three apparently similar cases and in one of these the epithelioma developed *before* the application of the x rays. Surely, these *facts* point to an intimate relation between tubercle and the development of malignant disease and show the necessity of carefully inquiring into the actual presence of, or predisposition to, tubercle in all future investigations regarding the etiology of cancer.

It is most gratifying to learn that you think that "similar inquiries to those already made in respect to cancer in other regions of the body might be instituted with advantage," as it corroborates my view that as a preliminary to the study of the etiology of cancer each region where it occurs should be studied separately. We are not justified in assuming that cancer is always due to a single cause or that it is necessarily the same in the different regions. I would urge the discontinuance of the terms "predisposing cause" and "actual cause." We have at present no means of differentiating between the two and few are agreed as to what should be considered a predisposing and what an actual cause. In fact, the use of these terms is misleading and presupposes a knowledge we do not at present possess. It induces many pathologists to investigate only along those lines which they imagine will lead them to the attractive discovery of the so-called actual cause and to neglect or to hold of little value those simple but somewhat dry facts which, I think, must prove the foundation-stone on which the greater part of the etiology of cancer—at any rate, in the human subject—will eventually be laid.

I am, Sirs, yours faithfully,

Wimpole-street, W., August 29th, 1904. CECIL H. LEAF.

INDIRECT SPECIFIC INFECTION THROUGH THE ALIMENTARY TRACT: IS THE IDEA CONCEIVABLE?

To the Editors of THE LANCET.

SIRS,—May I through the medium of your columns draw the attention of the profession to the possible risk of indirect specific infection through the alimentary tract after operation. I am well aware that many consider the above-mentioned phenomenon to be inconceivable on the ground that should specific organisms or toxins be ingested the antiseptic action of the alimentary secretions is sufficiently powerful to destroy or to neutralise them.

Some months ago I had the opportunity of assisting at an operation for flat-foot and as this, I think, is a case in point I will make no apologies for mentioning the matter. The operation was conducted with due regard to efficient asepsis and the patient so far as was known had no organic disease before the operation and showed a fair history. The primary operation wound healed by first intention and went on well for a week. At this period he complained of feeling unwell and displayed a temperature of 99° F. The next thing observed was redness, œdema, and discomfort at the closed wound which was immediately opened up and disclosed a small quantity of pus. I examined this pus and was able to demonstrate tubercle bacilli. Feeling convinced that this specific condition was in some way connected with the simple operation I made every possible inquiry and examination and at last was able to demonstrate a case of tuberculous mastitis in a cow which

belonged to the herd supplying the nursing home where the operation took place. Bearing in mind Kipling's story of the war correspondent and the sea serpent I refrained at the time from doing more than indicating my views to the surgeon in charge of the case. Lately I have been planning a series of ingestion experiments with a view to threshing the matter out thoroughly. Should the suggestion prove not to be fallacious it is easy to foresee elementary prophylaxis would demand the "Pasteurisation" of all food for at least a week after operation. With regard to research in this direction, I should esteem it a favour if any of your readers could suggest literature bearing on the point. Klein omits to refer to the matter, also Woodhead. Sternberg, I think, passes it by. Also our most able exponent of asepsis fails to mention the possibility of the idea in his invaluable monograph on Aseptic Surgery.

I am, Sirs, yours faithfully,

LANCELOT WILKINSON.

St. Bartholomew's Hospital, London, Sept. 5th, 1904.

PHIMOSIS AND HERNIA.

To the Editors of THE LANCET.

SIRS,—In his lecture on the Pathology and Treatment of the Herniæ of Children, published in THE LANCET of August 20th, p. 511, Mr. Edred M. Corner refers to the causal relation between phimosis and hernia. He lays most stress in his argument against this theory upon the fact that "the preputial orifice is rarely small enough to be of such paramount importance" and he proceeds to say that "ballooning of the prepuce" would occur and be observed by the nurse. In most cases of phimosis there is usually so much adhesion that ballooning would be impossible. Mr. Corner ignores some other evidence on this subject. The reflex irritation of an ordinary phimosis induces frequent micturition and the amount of straining exerted to empty a bladder with very little in it is greater than that required to discharge one moderately full. Moreover, besides the straining of frequent micturition, the persistent annoyance of a tight prepuce irritates the baby, makes him not only fretful and restless but induces paroxysmal attacks of screaming and these vocal efforts exert no mean amount of pressure on the abdominal walls.

Experienced nurses have repeatedly told me how much less frequent attacks of crying have been after circumcision. Quite recently I have had an opportunity of watching a small inguinal hernia which made its appearance about six weeks after birth completely disappear soon after circumcision. It is true a truss was worn for a few weeks but it was then removed and there has been no recurrence of the hernia up to the present. Among the ancient sanitary laws of the Jews I am inclined to believe that the rite of circumcision was by no means one of least value.

I am, Sirs, yours faithfully,

Uppingham, August 29th, 1904. H. LYON SMITH.

PATENT INFANT FOODS AND THE RISK OF SCURVY.

To the Editors of THE LANCET.

SIRS,—The subject of infant feeding is often treated in your columns, forming the substance of lectures, papers before medical societies, and books under review. There are many observers seeking by scientific methods to devise normal physiological foods for infants who are deprived of breast milk. In the meantime we have to deal in practice with such means as are available and to recognise that a large and increasing number of infants are still fed on "sterilised milk," condensed milk, or one of the numerous patent foods which are in the market. That these foods vary greatly in quality and value has been shown, especially by Dr. R. Hutchison,[1] and the careful reader of his excellent address will have no difficulty in distinguishing those that have some claim to be considered as normal infant foods from those the composition of which is altogether unsuitable. Recent works on infant feeding either condemn patent foods *in toto* or admit one or two as perhaps useful in certain conditions.

There is one feature of the use of these prepared foods which has not, I think, had full attention: its relation to the risk of scorbutic disease. Only a few weeks ago[2] Dr. G. F. Still described in THE LANCET two cases in which well-marked symptoms of infantile scurvy appeared after feeding with condensed milk and Allenburys and Benger's foods. It is well known that infants in whose dietary "fresh" or living food has no place are liable after the age of six months to the outbreak of this disease. It is also generally agreed that milk loses what have been called in this connexion its "natural living qualities" by heating to the extent necessary for boiling, for producing sterilised or pasteurised milk, and for making so-called "condensed milk." For the same reason those patent foods which belong to the class of desiccated milk and are mixed for use with water only, like the Allenburys (I. and II.), Horlick's, Carnrick's, and Nestlé's foods, form when given alone a diet insufficient to provide against the risk of scurvy. Patent foods directed to be mixed with fresh milk are much less liable to this objection, but if, as in the case of Savory and Moore's, Benger's, Allenburys No. III., and others, the milk is to be boiled, it furnishes no protection against such disease. It is further to be noted that although infantile scurvy is a comparatively rare disease and appears in a developed form only after the age of six months, it is probable that the like disorder may be present in slighter degrees; and that anæmia and poor nutrition, with perhaps tender gums, occurring in many infants at an earlier age may be attributable to a similar though less severe change in the blood. On the other hand, the means of preventing such blood disorder are simple and ready to hand—viz., the administration of a little floury potato, crushed rice, grated banana, raw meat juice, or the juice of orange or grape, besides fresh unboiled cow's milk. The habit of the poor to give to their babies "a little of what we have ourselves" may often disturb their digestion but in my opinion the teaspoonful of potato and gravy from the mother's plate saves many infants fed on condensed milk or on one of the cheaper patent foods from scorbutic trouble. In this way the poor may actually avoid some of the risks attending the stricter feeding practised by the rich.

The object of stating these facts is in order to urge the duty of our profession to show to the manufacturers of sterilised and condensed milk and infant foods the need of clear directions, to be printed upon all their tins and bottles, that after the age of three or four months one or other of the articles of fresh food alluded to should be given in small quantities twice a week in addition to the prepared food. It is necessary, too, that the public should be educated in the same sense, especially as printed instructions are often little read. Some of the best foods are already protected in this way—e.g., the Allenburys, Mellin's, and Benger's—whose proprietors give clear directions to the consumers for the occasional use of fresh diet whilst taking the patent food. It is only fair to state this as it is pretty evident that in Dr. Still's cases the printed advice had been disregarded. I quote from the label on the Allenburys food No. II.:—

> It is advisable, after the first two or three months of life, to give, in addition to the manufactured food of whatever kind, some fresh material, such as grape juice, the sweetened juice from ..... an orange, &c.

If these directions were made still more prominent and if the numerous patent foods which at present give no such warning were provided with it I think that the health of a multitude of hand-fed infants would be helped, without waiting for the day, for the coming of which food reformers are working, when a truly normal substitute for human milk in cases where this is not available shall find full acceptance.

I am, Sirs, yours faithfully,

Weymouth-street, W., Sept. 5th, 1904. R. HINGSTON FOX.

LAYMEN AND ELECTRICAL TREATMENT.

To the Editors of THE LANCET.

SIRS,—I trust that you will allow me a little space to reply briefly to Mr. Chisholm Williams and others who have criticised my note on the above subject in THE LANCET of August 6th. People have a curious way of misunderstanding or overlooking language the meaning of which appears quite obvious. I specially guarded myself against the idea of handing patients over to "people who pose as healers or who prefer to act apart from medical men." If this quotation from my letter has any meaning it disposes beforehand

[1] See THE LANCET, July 5th, 1902, p. 5.

[2] THE LANCET, August 13th, p. 441.

of all your correspondents' virtuous indignation over my supposed advocacy of the support of quacks or quack institutions.

None of your correspondents have advanced any arguments or stated any facts to support the contention that it needs the skill and knowledge of a qualified medical man to apply electricity in the great majority of conditions in which it is found useful, such as those I mentioned in my previous note. I should say that to one case which requires the knowledge and skill of a man like Mr. Chisholm Williams there are at least 20 that can be perfectly well treated by a masseur or masseuse who has received the excellent training of the modern teachers of massage and electricity; indeed, I venture to suggest whether it is not somewhat derogatory to the dignity of the profession for a qualified medical man to undertake the routine treatment of such cases.

To correct Mr. Chisholm Williams's and others' misconstructions of my remark about having one's ideas of diagnosis and treatment overhauled by another practitioner I will narrate a case in point. I sent an intractable case of Graves's disease for treatment to a highly qualified medical electrician (who, I believe, charged a guinea for each sitting). Without any thought or intention of breach of faith towards me he rather pooh-poohed the idea of using electricity and, of course, absolutely discouraged the patient, thereby preventing her giving electrical treatment a trial of sufficient duration to convince me of its value or otherwise in her case. Had I sent this patient to a lay electrician acting under my own instructions she would have continued the treatment as long as I thought it worth while. I have no lack of confidence in the good faith of my professional brethren, but I contend that skilled knowledge of a special line of treatment does not put the electric practitioner in possession of all one's reasons for desiring a certain line of treatment in a particular case. I cannot see any analogy between the case of a non-medical but trained person applying electrical treatment when prescribed by a physician and that of a patient being treated by a bone-setter or quack oculist. Finally, I must say that to talk about "covering" in connexion with my letter—if read with ordinary intelligence—appears to me to be rank absurdity.

With regard to the x rays, my experience is limited to their use by qualified medical men. I am glad to learn from Mr. Chisholm Williams that it is possible to get such treatment at a scale of fees within the reach of middle-class patients.—I am, Sirs, yours faithfully,

E. STANLEY SMITH, M.D. Durh., M.R.C.P. Lond.
Wimpole-street, W., Sept. 10th, 1904.

APOCYNUM CANNABINUM.

To the Editors of THE LANCET.

SIRS,—The editorial note on the Uses of Apocynum Cannabinum in THE LANCET of Sept. 3rd, p. 734, will, I hope, direct the attention of the profession to a remedy which I have found of the greatest value and have constantly prescribed for the last 14 years. The drug was first introduced to my notice by Dr. Joseph Kidd who recommended me to try it in the case of a patient with dilated heart who had passed from his care to mine when she moved into the country. The disease had reached a stage when the patient could no longer rest recumbent, the anasarca and ascites being so advanced that paracentesis appeared to afford the only chance of relief. The "vegetable trocar," however, answered admirably. Within the first two days of its administration the urine rose from about ten ounces in the 24 hours to 60 and the diuresis increased daily until the ascites and the anasarca almost disappeared, the patient getting about again and living for two years. Again and again I have had similar experience and a large number of my colleagues in this district now employ the remedy, having seen such marked benefit from it in cases of cardiac and renal dropsy in which we have consulted.

I have always used "Keith's concentrated tincture"[1] which Dr. Kidd recommended as the only reliable preparation of the drug. Several of my professional brethren who have employed the tincture usually kept by chemists have been disappointed in its effects; and to the want of activity in this, the ordinary, tincture must, I think, be attributed the fact that apocynum cannabinum has not come into more general use. The fluid extract recommended by Dr. J. Pawinski may be equally efficacious with Keith's preparation but of this I have no experience. The irritant action of the drug upon the digestive organs is a positive quality which must be borne in mind. In the first case in which I so successfully employed apocynum the dose recommended by Dr. Kidd, who was, at the time, I believe, supposed to prescribe drugs in decillionths and similar fractions of their ordinary doses, caused violent vomiting and purging and I had at once to reduce it to one-sixth the amount. In cases of cirrhosis of the liver I have found the smallest doses cause dangerous gastric irritation and I always warn the colleagues to whom I recommend the medicine against employing it in cases complicated with liver disease; in these cases I consider that it is contra-indicated. I prescribe the concentrated tincture in doses of from one to two minims every four hours or three times a day, increasing the dose by one minim every two days until the maximum which the stomach and intestines will bear is reached; this is seldom as much as ten minims. The medicine may be combined with other heart tonics. Employed carefully in this way its beneficial effects have, in my own experience and in that of the many friends to whom I have introduced apocynum cannabinum, been astonishing and yet so little is the medicine known that only once, when in consultation I have advised its use, has my colleague been familiar with it and that man immediately said, "I know where you got that from, it was from Kidd."

With the precautions which I have indicated I strongly advise your readers in cases of cardiac and renal dropsy to try this remedy, the merits of which I have long intended to press upon the notice of the profession through the medium of your columns.

I am, Sirs, yours faithfully,

THOMAS JAMES WALKER, M.D. Lond.
Peterborough, Sept. 10th, 1904.

[1] Keith's concentrated tincture of apocynum cannabinum may be obtained from Gale and Co., 15, Bouverie-street, London, E.C., and probably from other wholesale druggists.

THE UTILITY OR OTHERWISE OF FEVER HOSPITALS.

To the Editors of THE LANCET.

SIRS,—I entirely endorse the view to which Dr. C. K. Millard gives expression in your issue of to-day's date that, should an inquiry take place, the fact of having taken part in this controversy ought to constitute a disqualification for a place on the Commission. I agree, also, with the suggestion that "sanitarians who have been actively instrumental in securing the provision of fever hospitals in the past" should not be placed in the invidious position of having to sit in judgment on their own actions. The fact that many able and conscientious medical officers of health will thus be excluded need not be deplored, seeing that their evidence will be available and will lose none of its weight. Now a word of caution. I cannot help thinking that undue haste would be a great mistake. *Festina lente!* The reasonable demand that an inquiry should be held has been too grudgingly conceded up to the present time to justify the hope that this important question is ripe for settlement on its merits. Let us leave it for a time in the crucible of intra-professional discussion where the truth should be in no danger.

In conclusion, I echo your suggestion, Sirs, that the controversy may well be conducted without personalities in the future. Indeed, there is no room for them. For whatever be the outcome of this inquiry, should it take place, it will not be denied that much good has *already* been accomplished which will be a distinct gain to the cause of public health. I am, Sirs, yours faithfully,

Nottingham, Sept. 10th, 1904. EDWD. DEAN MARRIOTT.

THE BOILING OF MILK.

To the Editors of THE LANCET.

SIRS,—May I, as the "iconoclastic scientist" referred to by Dr. J. M. Fortescue-Brickdale in THE LANCET of Sept. 10th, p. 792, offer a word of explanation with regard to the slight misapprehension he is under as to my views on the boiling of milk. In the course of my conversation with Mr. R. Bevan I did not enter on the very debatable ground included under reasons (2),

(3), and (4), the uncertainty of the views held by various observers on these points being ably shown by Dr. Fortescue-Brickdale. My observations were really confined to the question of boiling as a preventive measure against souring, and in this connexion I can only reiterate the assertions I made to Mr. Bevan—viz., that it is a very dangerous process if it be carried out for the purpose of *preserving* milk during those portions of the year when the prevailing temperature throughout the whole 24 hours does not fall below 65° F. The boiling of milk destroys the ordinary lactic acid organisms but it does not destroy the spore-bearing organisms that are almost invariably present, with the consequent result that when the milk is cooled and allowed to stand at a temperature in the neighbourhood of 70° F. a secondary fermentation takes place due to the development of these latter organisms. Herein lies the danger, for the milk does not sour but usually remains sweet in taste, though a very slight bitterness (due to the peptonising action of these bacteria) may perhaps be detected. The temptation to use milk in this condition is naturally great, for apparently it is still in a sound condition, while, as a matter of fact, it is becoming rapidly charged with deleterious bacterial products. Now the development of these peptonising bacteria is in a clean milk almost completely checked by the wave of lactic acid fermentation, while if this be stopped by the process of boiling a perfectly free field is left to the sporogenous types to grow unhindered and to bring about a toxic condition of the milk which would otherwise not have occurred. If milk be boiled to be drunk immediately it may be, and probably is, as a preventive measure of the greatest value, but if the milk is going to be kept over night for consumption next day such an end is completely defeated. It may well be asked, "What, then, is to be done in the circumstances?" If I were to dare to suggest the word "preservative" harsher words than "iconoclast" might be used, but the question whether preserved milk or putrefying milk is the better as an article of diet I will leave others to answer, and although the addition of preservatives by the milk trade should on no account be allowed the addition of them in the home, under a medical man's direction with regard to quantity, is quite another matter.

I am, Sirs, yours faithfully,

CECIL REVIS.

King street West, Hammersmith, W., Sept. 13th, 1904.

MATHEMATICS AND EXAMINATIONS IN PUBLIC HEALTH.

To the Editors of THE LANCET.

SIRS,—Medical officers of health in their annual reports have to submit figures of the increase and decrease of populations and to make calculations as to the death-rate, infantile mortality, birth-rate, &c., of their districts, and it is unfortunate that at the various examinations in public health candidates are not systematically tested on these points. They are often asked questions more likely to crop up in an insurance office, but the use of logarithms and the estimation of a population after the method of the Registrar-General are seldom asked for by the examiners. Surely these are practical matters which everyone who holds a diploma in public health should be acquainted with, but I have known cases where medical officers of health, fully qualified, were unable to make these calculations.

I am, Sirs, yours faithfully,

MU.

ST. BARTHOLOMEW'S HOSPITAL.—A history of St. Bartholomew's Hospital has been written by Dr. Norman Moore and will be published shortly by Messrs. C. Arthur Pearson, Limited. The work will be illustrated by original sketches by Mr. Howard Penton. The volume will be issued at two prices—namely, two guineas and one guinea—and the whole of the proceeds of the book will be given to the fund for the rebuilding of the hospital. A list of the subscribers to the first edition, which will be limited to 2000 copies, will be printed as an appendix to the work. Intending subscribers are requested to send their names to the honorary secretary of the rebuilding fund, St. Bartholomew's Hospital, Smithfield, London. This work should prove entertaining and instructive to many and a desirable acquisition as a work of reference to the student of history and philanthropy.

THE FEEDING OF SCHOOL CHILDREN.

HISTORY AND ORGANISATION OF THE PARIS CANTINES SCOLAIRES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THE supposed physical degeneration of the race has been the subject of so many sensational dissertations that public interest is now fully aroused and the nation is anxious to deal with the matter. It may be, as some very good authorities contend, that with a falling death-rate and a longer average duration of life it cannot be maintained that the race as a whole is losing its strength and vitality. On the other hand, no one has attempted to deny that there is physical degeneration among certain sections or classes of the community. Such degeneration must occur notably among those who in their infancy and childhood have been insufficiently or injudiciously fed. As, further, the law renders education obligatory we have in the primary schools a machinery all ready made and at hand permitting full investigation into the facts of the case. There are here also the means of remedying the evil wherever it shall have been proved to exist. Whatever political economists and others may say, no medical man would maintain that it is possible to educate an underfed child without grave risk to his or her health. From the physical point of view there can be no question but that the child must be fed first and educated afterwards. Nevertheless, it has been asserted over and over again that in London alone there are daily some 50,000 children who go to school without breakfast. Whatever the basis of this assertion and even if exaggerated there is not the slightest doubt that many of the children who attend the primary schools are often injudiciously fed, sometimes insufficiently fed, and on some days not fed at all. To attempt to teach children thus suffering is to waste public money as well as to injure the child pupils. It is certainly a means of producing physical degeneration. By law and by taxation schools and teachers are provided and yet food is more necessary than either school or teacher. This, of course, will be admitted by everybody. Only it will be said that parents ought to feed their own children. It is, however, the obvious fact that some parents either cannot or will not feed their children and this accounts for much of the physical degeneration. Nevertheless, years have rolled by and nothing has been done of a systematic character. Here and there charitably inclined people have organised soup kitchens in connexion with schools in very poor quarters, but these are sporadic local efforts and are not to be relied upon. Also it is not charity, with its pauperising and degrading influence, that is needed, but a national scheme by which, in some way or other, every child shall receive, without imposing any humiliating condition, all that is necessary for its physical as well as its intellectual development. How this is to be done and who is to pay the cost are problems that will not be easily settled. But it can be done, it has been done, and what has been achieved in other countries will probably be attempted here. In any case, if a foreign nation feeds all its children adequately and if all are not fed in England then, in time, we shall stand at a disadvantage when compared with that foreign nation. Now, the nation in question is our nearest neighbour, France. Surely it behoves us to know what has been done so near at hand and to see if this example may not serve as an object lesson.

It was from the school fund (*caisse des écoles*) that the school canteens (*cantines scolaires*) gradually merged into existence. In the latter days of the Second Empire a law on primary instruction was enacted which bears the date of April 10th, 1867. Article 15 of this law is thus worded:—

> A deliberation of the municipal council approved by the prefect may create in all communes a school fund for the purpose of encouraging school attendance by giving rewards to the most assiduous pupils and help to indigent pupils. The revenues of the school fund will consist of voluntary subscriptions of subventions given by the commune, by the department, or by the State. With the authorisation of the prefect it may receive gifts and legacies. Several communes may be authorised to join together for the formation and management of such a fund. The service of collecting for the fund is rendered gratuitously.

M. Duruy, at that time Minister of Public Instruction, issued a circular on May 12th, 1867, explaining this law. He said it was best to leave to the inhabitants the care of

taking the initiative in the creation of such funds and drew attention to a fund already in existence in the Second Arrondissement of Paris. This fund had been established by the National Guard in 1849, under the Second Republic. The circular also calls attention to the fact that such funds are in existence in Switzerland where, "in accordance with a touching custom, newly married couples on their wedding day hand over to the school fund a sort of offering to childhood." The above law, however, can only be qualified as the promulgation of an idea and the approval of a scheme; it did not enforce its application. Three years later the Franco-German war broke out and it was only three years after the war that the nation had sufficiently recovered from its disasters to think of these proposed reforms. Early in 1874 a school fund was created at Montmartre, a district which has some 200,000 inhabitants, and in other localities. This was done in harmony with the stipulation of the law of April 10th, 1867, but already in the minds of the more ardent friends of education the scope of the law was enlarged. Thus the school fund of the Montmartre district so far back as 1874 issued a pamphlet in which the following passage occurs:—

> To-day all who are earnestly devoted to their country recognise the necessity of developing education in France. 35 gratuitous schools exist in the XVIII. Arrondissement. Learned and devoted teachers there impart primary instruction to nearly 12,000 children but in spite of their skill and zeal much still remains to be done. It is necessary to encourage both masters and pupils. Facilities must be provided so that poor children may frequent the schools and, therefore, they must be given, when the weather is very rigorous, some shoes and warm clothing, and finally they should be encouraged to prolong their studies which are too often abandoned after the first communion. The school fund is created so as to provide for all these necessities.

Thus, from the very beginning the idea germinated of giving material help in regard to physical requirements. Very little, it is true, was done at first. The distribution of strong thick boots is one of the first items on record. Then there is also an account remaining of outfits provided for some young girls who had so distinguished themselves as to be admitted to the Ecole Normale, or training school for teachers, but were too poor to dress themselves well enough to go to such an institution. These and many other voluntary efforts made in different parts of France, though altogether insufficient, had a double advantage. They created the nucleus of future administrative bodies and prepared or ripened public opinion so that it was ultimately possible to convert into an obligation that which had formerly been but a voluntary effort. This final step was brought about by the law of March 28th, 1882, on compulsory education. Article XVII. of this law enacts that

> The school fund instituted by Article XV. of the Law of April 10th, 1867, shall be established in all the communes.

Thus every district is now compelled to institute a school fund and soon there followed a great change in the policy or the purport of these school funds. Originally they were intended to aid the cause of education by urging children to attend school and by giving them prizes when they distinguished themselves. Now the law compels everyone to go to school and also provides efficient teaching. Therefore the school fund administration need not attend any longer to such matters but find ample occupation in seeing to the physical requirements of the pupils. The police compel the children to go to school and the State, by the appointment of teachers, attends to their education. To the school fund remains the questions of food, of clothing, and of health-restoring holidays. All these are matters of great complexity and necessitated many tentative experiments before anything like a satisfactory system of feeding the children was established. In regard to clothing and to sending unhealthy or debilitated children to the country it may still be said that more might with advantage be attempted. But if in this there remains room for further improvement it may now be said with confidence that in Paris and in most other places every child attending school receives a wholesome and a sufficient meal. Personally I can only speak of what I have seen in Paris, but the law applies equally to the whole of France though the success of its application must depend to a large extent on the devotion or intelligence of each local school fund committee of control.

That the question of health predominated in the management of these funds is shown by the preference very generally given to school colonies over school excursions, where there was not money enough for both. By school excursion is meant an expedition of one or more days into the country. The teachers, in accompanying the pupils, give such explanations of what is seen as to constitute object lessons. This is at once a pleasant change and a useful means of education. But it is generally considered far more beneficent and useful to select a certain number of sickly and debilitated children and to send them for several weeks to some bracing country place where their health may be thoroughly restored. This is called a school colony and constitutes a great and happy feature of the educational machinery. Thus, for instance, the Montmartre School Fund has purchased a magnificent mansion and its surrounding park at Luzancy, not many miles from Paris. There four batches of 186 children spend several joyful weeks during the course of the summer, living nearly all the time in the open air. The school fund of the neighbouring district, the XVII. Arrondissement, sent last year 137 children to the seaside at Fécamp and 281 to the country at Montlhéry, making in all 418 children who spent a total of 8500 days right away from the big town, enjoying wholesome recreation in the fields or on the seashore. What this means in health and happiness to these poor children cannot be expressed by mere statistics; it is best left to the imagination. To help to defray the cost of these school colonies the municipality has voted an annual subvention of £8020 divided between the 20 school funds of the 20 Paris districts, or *arrondissements*, in proportion to the number of poor in each locality.

As a rule, each school fund has three committees—one for the school canteens, one for the provision of shoes and clothing, and the third attends to the holiday excursions and holiday colonies. The general committee from which these subcommittees are chosen generally consists of the mayor, the members of the municipal council, and the government school inspector of the district. Then the voluntary subscribers to the fund elect out of their own ranks and by a ballot vote probably 20 or 24 committee men. Thus the local authority and the local subscribers are both represented and share in common the task and responsibility involved. Early in the day it was found expedient to obtain the assistance of ladies. At first many of them were connected with church charities and were called lady patronesses. But this did not work at all. No one wanted to be patronised, and the main object of education as at present organised being to inculcate the sense of the duties and of the dignity of the citizen any idea of charity is absolutely antagonistic to the whole spirit of modern educational reform. The lady patronesses were no longer allowed to interfere and in their stead lady delegates were appointed. Their mission is not to patronise but to see that the rules are applied and that everyone obtains his rights. These ladies have a card bearing the stamp and signature of the mayor and also sometimes wear a ribbon favour of the colours of the town. The lady delegates to the canteens must visit the schools under their charge at least once a week. They inscribe the accounts on the printed formulas and see that all is absolutely clean and that the meals are well prepared. In this respect the ladies have rendered great service, for it is due to their special knowledge and skill that the cost of the meals has been considerably reduced.

It was in May, 1877, that the Prefect of the Seine informed the various school funds of Paris that the municipal council had determined to study how a good, wholesome, warm meal might be given to all the children once a day. The answers at first obtained were not encouraging. The school funds had not the means either in regard to management or in regard to their financial resources to attempt so vast an enterprise. It was also estimated that such meals would cost on an average 25 centimes (2½*d.*) each. For the moment the matter dropped. But in February, 1881, the question was raised whether all the children who were attending school and whose parents were in receipt of poor relief might not be given a meal while at school. The school fund of the Montmartre district at once volunteered to undertake this service. Other districts followed the example. The municipality voted funds in aid, and a report presented for the year 1884–85 showed that during the year 15 canteens had served 1,110,827 portions; one-third of these were helpings of soup, another third meat, and the rest vegetables. The children had paid 36,776 francs 90 centimes for 736,526 of these helpings; while 374,301 helpings had been given without payment. The total cost was 59,264 francs 95 centimes. The portion of meat then given weighed from 15 to 20 grammes and cost the school funds 0·0578 franc. But soon and with better organised surveillance and management the portion was increased to 20 or 25 grammes and the cost was lowered to 0·045 franc.

The system of feeding the children was thus fairly launched. It has now become universal and experience has taught that the cost need not be more than 15 centimes or 1½*d.* per meal of soup, meat, and vegetable. The latter naturally is a separate course, a substantial dish, properly cooked, not a little greenstuff boiled in water as we too often see in England. The principle now adopted is to encourage all the children, whether poor or not, to eat their meals together. A child may bring his own food with him from home but it is never so cheap and is always cold and rarely so good as the meal provided by the canteen. Therefore both children and parents prefer the canteen dinner, but the children who are not content with water bring their own wine or beer in bottles. Even the poorest children generally manage to mix a little wine with their water, particularly now that recent legislation in favour of hygienic drinks has reduced the retail cost of wine to 2*d.* per bottle and even less. From the very first the greatest care has been taken not to allow any loss of dignity to arise from the free feeding. The fundamental principle of the whole management is the absolute innocence of the children. They cannot be expected to pay. Their parents may be at fault; if so, there is only the greater reason to shelter the children and to try to preserve in them that sense of self-respect which might so easily be wrecked by their parents' bad conduct. Each child is called upon to pay 1½*d.* per day for his meal and receives in exchange a check or ticket. Sometimes this payment is effected in a small office, one child entering at a time. All receive a ticket for their dinner and only the person who gives the ticket knows who have paid and who have not. The parents of those who do not pay are visited. A full inquiry is made as to their condition and if they are poor they are put on the free list.

Of course it is easy to see that such a system might lead to much abuse. If the father is at work and has only one or two children the gratuity is refused. It is never refused to widows or workers with large families. To this I objected that the father, though earning high wages, might squander them in dissipation and starve his family. Was it not encouraging vice to feed his children? Or, again, others were clever in shamming poverty and to feed their children encouraged their hypocrisy and their lying propensities. All these and many other objections were met with the one simple, all dominating reply: "The children must be fed." There were methods of investigation; pressure was brought to bear on the parents. The parents or guardians of every child fed gratuitously were called upon and full investigations were made. Friends and witnesses and their employers were also seen when necessary. There was no objection to the show of some severity towards unworthy parents but the child was held sacred. In no case was the child to be humiliated or troubled in any way and on no pretext whatsoever should the food he needed be refused. Besides, there were various categories of gratuity. Persons who could not afford the 1½*d.* saved their dignity by paying a 1*d.* or only a ½*d.* per day. Nevertheless, in the poor quarters it is in the majority of cases of no use insisting on payment. The children arrive at 8.30 A.M. However poor their parents they generally have had something to eat before starting. Nevertheless there are some extreme cases of poverty, and then a piece of bread is given at the school when the starving child arrives. But this is altogether exceptional. It is at 11.30 A.M. that the mid-day warm meal is given. The children leave school at 4 P.M. and then they are supposed to dine with their parents in the evening. But to many of them it is the mid-day French breakfast that they get at school which constitutes their only satisfactory meal. A few children, however, cannot go home at 4 P.M. as their parents are out working. These are allowed to remain on the school premises till 7 P.M. where they play and prepare their lessons. Then they are given what is called a *goûté*, a sort of "snack," a little bread and butter or jam. Such is the full scope of the feeding undertaken by the school funds though all that is outside the 15 centimes midday meal is exceptional. How far the feeding is gratuitous varies according to the district. At the Eppinette district only 20 per cent. of the children pay for their meals. At Batignolles the proportion is 40 per cent. and in the wealthiest quarters of Paris as many as from 60 to 70 per cent. of the school children pay for their midday repast. The school funds, in so far as they depend on voluntary contributions, could not feed all these children and during the last three years the Paris municipal council has given to the various school funds of the capital subventions amounting to £40,000.

Such is the general principle on which the system works. Each locality manages its own affairs and is assisted by subventions from the centre and there is emulation between the various funds. It is now only necessary to add a few words as to the canteens themselves. They are object lessons in cleanliness and in simple but refined cooking. The meat is weighed after it has been cooked, the bone and fat being removed; then the younger children get 20 grammes and the older children 30 grammes of cooked meat. The *ménu* is, generally speaking, somewhat as follows. Three days a week there is *bouillon gras*, a delicacy unknown in England, as no ordinary English person will take the trouble to put the proper proportion of flavouring herbs and vegetables to the beef. Only twice a week is the boiled beef with which the soup has been made given for the second course. As this meat is lighter than roast meat care is taken to supply for the third course the most substantial vegetables—namely, lentils or haricot beans. What a difference it would make if in England the people knew how to cook these highly nutritious vegetables. At one of the canteens I watched and inquired as to the process. First some onions are fried in good grease, in preference the melted fat of pork or veal. Then some thyme and some laurel leaves are added with "just a suspicion" of garlic. The haricot beans or lentils that have been soaking in water all night are placed over this savoury sauce. Its fat counteracts their dryness and the aroma of the herbs, onions, and garlic confers an appetising flavour. On three days a week roast beef, pork, veal, or mutton is given, preceded by a tasty vegetable soup and followed by a dish of mashed potatoes, or of maccaroni cheese, or of rice and milk, all well flavoured, well cooked, and of excellent quality. Such is the three-halfpenny meal of three courses provided alike to the poor and the well-to-do children attending the primary schools of Paris. But this is not all. The medical officers who examine the children may prescribe larger portions where necessary and quite a number of weakly children have cod-liver oil given to them in winter and syrup of iodide of iron or phosphate of lime in summer.

If the cooking is refined some attempt is also made to refine the manners of the children. So as not to dirty their clothes they are taught to use serviettes, and, generally speaking, the masters or mistresses pay their 1½*d.* and take their midday meal with the children, eating exactly the same thing. This example gives confidence and does much good. It is also a very effective way of controlling the cooking. Thus we have the hopeful spectacle of what in England would be pauper children sitting side by side with other children who are in much better circumstances and eating simple but refined food at the same table as gentlemen or lady teachers who have won their university degrees. Then, so that the poorer children should not be looked down upon, care is taken not only to conceal the fact that they are unable to pay for the meal but out of the school fund simple articles of clothing are given them. These poor children do not, therefore, look shabby and thus their self-respect is maintained. Is there not in all this the making of a healthy people and a strong race? Can we in England afford to ignore the example here given? Is it not safe to argue, as the managers of the school funds in Paris argue, that whatever the faults of the parents, whatever may be done to the parents, still the children are blameless? Therefore, and without hesitation, if we would preserve the race, without the loss of a moment and without making a single exception, every hungry child must be fed. Economists, politicians, and others were left to discuss and to squabble over the rights and wrongs of the case, the school funds of Paris, encouraged by the municipality, commenced by building the kitchens, cooking the meals, and somehow or other things fell into their places, and to-day everyone is quite content and some not a little proud of the good that has been done.

WIGAN MEDICAL SOCIETY.—A meeting of this society was held on Sept. 1st, Mr. J. Chronnell, the President, being in the chair. There was a good attendance of members. A vote of condolence was passed to Lady Banks and her son in their recent bereavement. The honorary secretary (Mr. W. Berry) read a paper on Death Certification. An interesting discussion followed.

LUNATICS IN WORKHOUSES.

(FROM A CORRESPONDENT.)

IN an article entitled "The Muddle of the Law of Lunacy" which appeared in THE LANCET of Feb. 27th, 1904, p. 612, attention was drawn to the difficulties which surround the admission of persons of unsound mind into a workhouse as a preliminary to their examination by a magistrate. Assuming that these difficulties have been in some way evaded it may prove that the form of mental defect exhibited by the patient is one which the law regards as capable of being suitably dealt with in the workhouse itself, and it may, therefore, be not without profit to consider what are the conditions under which persons may be so detained for care and treatment.

The lunatics who become more or less permanent occupants of workhouses are, in the main, (1) young persons whose mental disability takes the form of idiocy or imbecility; (2) elderly dements; and (3) harmless chronic cases irrespective of age. All these may reach the workhouse either directly from the outside world or by transfer from an asylum for acute cases under Sections 25 and 26 of the Lunacy Act, 1890. This latter group does not usually cause much trouble as the procedure required by the Act is fairly simple, but the construction of Section 24 of the Act, which controls the detention of cases of the former kind, has provided innumerable themes for discussion. Subsections (3), (4), and (5) of Section 24 are the ones with which we are here chiefly concerned and it is proposed to indicate some points of interest which the attempt to apply them has brought out. Several opinions given by the Commissioners in Lunacy, which have not previously been made public, will be incidentally referred to. As will be seen from a perusal of Subsection (4) two medical certificates are required. One of these is in the familiar form numbered 8 in the Schedule to the Act and may be given by any legally qualified medical practitioner, provided that he is not a medical officer of the workhouse concerned, while the other must be by the medical officer of the workhouse and must state (1) that the person whom it is proposed to detain is a lunatic; (2) that he is of a type suitable for detention in a workhouse; and (3) that there is in the workhouse sufficient and suitable accommodation for the lunatic. This second certificate, which is in the form numbered 10 in the Schedule to the Act, differs also from the former one in that it has no place for the "facts communicated by others" of form 8. These certificates accompany and "support" the application for a detention order which is made to "a justice having jurisdiction in the place where the workhouse is situate" and their chronological relation to each other and to the application is worth a moment's consideration. In a case recently submitted to the Commissioners in Lunacy for their opinion the justice had made an order for detention which was dated 16 days after the date of the medical certificates. This order the Commissioners declared to be invalid and they directed that the medical officer of the workhouse in which the patient was being detained should take steps to obtain a new order from a justice. The limit of time between the giving of the certificate by the medical officer of the workhouse and the making of the order by the justice is 14 days, exclusive of the day on which the certificate was given. This may be assumed from the fact that the certificate upon which the justice proceeds is in the same form as the one by means of which the medical officer, acting under Section 24 (2), is enabled on his own responsibility to detain the lunatic for 14 days. In the opinion of the Commissioners the order in which the medical certificates are given is of no consequence, the order in which they are mentioned in Section 24 (4) and referred to above being apparently merely accidental. This matter was brought before the notice of the Commissioners in May last in some cases where the outside practitioner had certified first, and they replied that they did not think "that the fact of the certificate, given by the medical officer of the workhouse under the provisions of Section 24 (2) of the Lunacy Act, 1890, being dated after the date of the certificate given by the outside medical practitioner would cause an order made upon these two certificates to be invalid." There is, however, a serious objection to such an arrangement which medical men who may be invited to give certificates would do well to bear in mind, and it is to be found in the fact that whereas the certificate given by the *workhouse* medical officer is alone sufficient authority for detaining the patient for not more than 14 days, that given by the outside practitioner has by itself no such effect. It would indeed appear that in the cases alluded to the patients were illegally detained in the workhouse for several days and, if any of them had known the circumstances and had been of a litigious disposition, as paupers frequently are, they might have caused those concerned a considerable amount of trouble.

The words "not being an officer of the workhouse," as applied in Section 24 (4) and (5) to the outside practitioner, have been prolific in disputes. As they stand the words do not necessarily exclude all the medical officers of the union or parish to which the workhouse belongs; thus it seems legitimate for a district medical officer to certify in conjunction with the workhouse medical officer and to receive payment for so doing. In London, especially, the position is complicated by the fact that the sick wards of the workhouse may be aggregated into a distinct institution, the "workhouse infirmary," which may be situated at a distance from the workhouse proper and may have a separate medical officer. Accommodation for lunatics may be provided either at the workhouse or at the infirmary and the medical officer of the establishment selected is, for the purposes of the Lunacy Act, the "medical officer of the workhouse." The question then arises whether the medical officer of the branch where the lunatics are not confined is competent to give the certificate required from a "medical practitioner not being an officer of the workhouse." A recent case, in which the circumstances were as follows, will serve to illustrate the position. The workhouse and the infirmary, though distinct as regards administration, were on adjoining plots of land and the medical officer of the workhouse was also medical superintendent of the infirmary. Acting in his capacity as medical officer of the workhouse the gentleman holding the two appointments allowed his assistant medical officer at the infirmary to give the certificates of the outside practitioner. It was attempted to justify this proceeding by the contention that the assistant at the infirmary occasionally took duty for his senior at the workhouse and that it has been held that a workhouse medical officer's deputy may properly give certificates as an outside practitioner under Section 24. A suggestion to this effect is, indeed, to be found in the text-books expounding the law of lunacy, but it is to be observed that it does not rest on a case decided in a court of law but on an opinion given, in reply to a correspondent, in the *Justice of the Peace* for April, 1891. More important still, it has no bearing on the point at issue since the deputy in question is one appointed by the medical officer in accordance with Article 199 of the General Order of the Local Government Board, Dec. 8th, 1847, and Article 200 of the General Consolidated Order of July 24th, 1847, and such a deputy is not an officer of the workhouse or of the guardians. An appeal was made to the Commissioners in Lunacy and they held that in this instance, at any rate, the infirmary was part of the workhouse and that "the assistant medical officer referred to could not sign the certificate in question under the hand of a medical practitioner not being an officer of the workhouse." In connexion with this branch of the subject it may also be noted that there appears to be no reason why in suitable cases one medical officer's certificate should not refer to several patients provided these are properly distinguished and enumerated. The question as to whether or not it is permissible for a guardian who is a member of the medical profession to sign the certificate of the outside practitioner and receive pay for so doing has been recently raised. Such an arrangement appears open to criticism. In a note in Glen's Poor-law Orders under Article 177 of the General Consolidated Orders, dated July 24th, 1847, which deals with certain payments for special medical services, the opinion is expressed that "as a general rule it is thought not desirable that a medical man who is a guardian of the union should give certificates under this Article in his own union" and this principle appears to be one which the Local Government Board would approve. The view of the Commissioners in Lunacy is set forth in the reply to a communication which in June last was made to them in regard to a case where a guardian had given a medical certificate in support of the application for a detention order. It is to the effect that "a member of a board of guardians is not an officer of the workhouse within the meaning of

Section 24 (4) of the Lunacy Act, 1890." One must infer, therefore, that an order for detention obtained in such circumstances is valid.

Section 24 (5) deals with the question of the fees payable for medical certificates. "The guardians of the union to which the workhouse belongs shall pay such reasonable remuneration as they think fit to the medical practitioner who, not being an officer of the workhouse, examines a person for the purpose of a certificate under this section." No fee, that is, goes to the workhouse medical officer. This circumstance has afforded material for numerous speculations which it would be idle to go into; the medical officer may adopt whichever affords him the most consolation. But even for the outside practitioner there are pitfalls. A medical man was recently asked by a relieving officer of one of the great London unions to certify as to the mental condition of certain patients whom it was proposed to detain under Section 24. No stipulation was made as to the fee to be charged and a sum of one guinea for each of the half dozen cases was demanded. The guardians, however, declined to pay more than three guineas on the ground that the decision as to the amount rested solely with them and in this instance their action was not contested. Perhaps for this reason they have since been endeavouring to get the certificates at 5*s*. It is probable that the guardians' powers under the section are not so extensive as they suppose. In April, 1902, the issue was raised in an action brought in the Chertsey county court before his honour Judge Lushington. A claim for seven guineas was made for certifying seven imbeciles at the Chertsey workhouse and the guardians refused to pay more than three. The medical man therefore sued the guardians for the full amount and it was contended on his behalf, and admitted by the opposing counsel, that the word "reasonable" in the section only determined the question as between the guardians and the Local Government Board in respect of a possible surcharge. The fee of one guinea was shown to be a customary one and judgment was given for the plaintiff for the amount claimed with costs on the higher scale. There seems to be no very good reason why the fee payable should not have been fixed by the justice who makes the order for detention, even though the cases falling under Section 24 differ from those in which summary reception orders are made, in that the justice does not himself call in the medical practitioner who certifies.

The machinery of Section 24 is usually set in motion by a relieving officer who, according to Subsection (4), *may* make application for a detention order. From the use of the word "may" it is to be inferred that if circumstances rendered such a course convenient the medical officer or the master of the workhouse might take the initiative. It is worth noting also that under this section the application need not be in writing, and, further, that it is not necessary for the justice who makes the detention order to see the patient in respect of whom it is made. Section 5 of the Lunacy Act, 1891, requires that the medical certificates, given under Section 24 of the Act of 1890, should be attached to the order and the certificates should be laid before the Commissioners in Lunacy on the occasion of their next visit to the workhouse.

In London the care of "lunatics in workhouses" devolves largely upon the Metropolitan Asylums Board. The institutions for lunatics controlled by that body are not, however, "asylums" within the meaning of the Lunacy Act, 1890. That Act indeed specifically includes the asylums of the Board under the term "workhouses" (cf. Section 341), and in so far as the Act applies to them the detention of lunatics is effected through the agency of Section 24 as at other workhouses. The Lunacy Acts, however, do not constitute the sole controlling authority, there are numerous orders of the Local Government Board which have to be complied with. In consequence of this the procedure laid down for obtaining the admission of patients to these asylums is decidedly complicated as compared with that followed when persons are removed to county and borough asylums and calls for the preparation of the documents enumerated below when the lunatic is over 16 years of age.

1. Application by a relieving officer to a justice having jurisdiction in the place where the workhouse is situate for an order for the detention of the lunatic in the workhouse of the parish or union to which he is chargeable.

2. Statement of particulars by the relieving officer to accompany the application.

3. Certificate by the medical officer of the workhouse under Section 24 of the Lunacy Act, 1890.

4. Certificate by an outside medical practitioner under the same section.

5. Order for detention made by the justice under the same section.

6. Order for the admission of the patient to one of the asylums of the Metropolitan Asylums Board signed by the clerk to the guardians of the parish or union from which the patient proceeds. At the present time the Board's asylum at Tooting Bec is the only one which directly admits patients of the class here referred to.

7. Certificate by a medical officer of the parish or union to which the patient is chargeable to the effect that the patient is "a chronic and harmless lunatic, idiot, or imbecile" suitable and physically fit for removal. This certificate differs in several respects from the certificate referred to in paragraph 3 *supra* though its general purport is the same and it is usually given by the same medical officer. The chief difference seems to be that it may include "facts communicated by others."

8. A report "signed by the chairman or vice-chairman of the board of guardians of the parish or union to which the pauper is chargeable or by some member of the visiting committee of such board of guardians."

9. A second medical certificate as to the patient's bodily condition is frequently advisable for the following reasons. The admission order mentioned in paragraph 6 *supra* is, according to the Order of the Local Government Board of Feb. 10th, 1875, which regulates admissions to the asylums here considered, to be signed by the clerk by direction of the board of guardians, and it is further laid down that "such direction shall not be given until the certificate and report above mentioned (cf. 7 and 8 *supra*) have been laid before the board of guardians." The medical certificate must therefore be anterior in date to the admission order and as this is available for seven days it sometimes happens that the statement of the medical officer as to the patient's physical fitness for removal has been made so long before the removal to the asylum actually takes place as to afford no satisfactory evidence about the patient's condition at that time.

The detention order mentioned in paragraph 5 *supra* directs the detention of the patient in the workhouse in regard to which the medical officer has certified that there is suitable accommodation and would not, on the face of it, be a valid authority for detaining the patient in one of the asylums of the Metropolitan Asylums Board. This difficulty is, however, met by Section 4 (2) of the Lunacy Act of 1891 which directs that no further certificate or order shall be required "upon the transfer from a workhouse to an asylum provided under the Metropolitan Poor Act, 1867, of a lunatic with regard to whom a certificate or order under the said Section 24 [i.e., of the Lunacy Act, 1890] made while he was in the workhouse is in force." It may be noted here that the medical certificate mentioned in paragraph 7 *supra* is required for the admission, not for the detention, of the patient and is therefore not excluded by the Act of 1891, however superfluous it may, on its own merits, appear. In connexion with paragraph 1 *supra* should be read Section 24 (7) of the Lunacy Act, 1890, which enables an officer of the asylum to act as a relieving officer in matters relating to paupers in the asylum.

A modification of the above procedure is adopted in the case of children under 16 years of age. No order for detention is obtained from a justice, apparently on the ground that in these instances the interests of all concerned are sufficiently safeguarded by the principle that the detention of a lunatic is justifiable at common law if necessary for his safety or the safety of others. The force of the objection raised in paragraph 9 *supra*, to having the medical certificate as to fitness for removal given several days before such removal, is recognised in this instance by the Local Government Board which, by an Order dated May 5th, 1890, requires that the certificate should be given on the day of the removal or on the day immediately preceding. As the admission order in these cases is available for 14 days both the certificates, numbered 7 and 9 above, will be usually required. When the child reaches the age of 16 years an order for detention under Section 24 of the Act of 1890 is obtained, but there is here a slight departure from the course prescribed in the Act, since by Section 4 (2) of the Lunacy Act, 1891, the medical superintendent is not required to certify that the asylum has sufficient accommodation for the proper care and treatment of the case.

Patients may be transferred to one of the asylums of the Metropolitan Asylums Board, as to a workhouse, under

Section 25 of the Act of 1890 and the Local Government Board, by an Order dated Jan. 30th, 1891, made special provision for the admission of such cases. This consisted chiefly in dispensing with the certificate and report alluded to above in paragraphs 7 and 8. No provision, however, seems to be made for dealing with such cases of chronic insanity as are referred to in Section 26 of the Act of 1890 as suitable for detention in a workhouse.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Milk in Dublin.

AT a meeting of the board of guardians of the South Dublin Union held on Sept. 7th a motion was adopted with reference to the great increase of infant mortality in Dublin due to the adulteration of milk and other causes. Sir Charles Cameron and Professor E. J. McWeeney have stated that the milk from the town dairies is better and more trustworthy than that brought in from small farms in the country. As to the infantile mortality of the city, the chief medical officer of health said that it was 150 per 1000 of the population, being below the average of the largest 76 English towns but higher than that of London. On being asked to suggest a remedy he expressed the opinion that the whole of the supervision of dairies and cowsheds should be under the veterinary department of the State which would employ a staff of veterinary inspectors to examine the condition of the cows and the hygienic conditions under which they were kept. Professor McWeeney, when asked as to the means for obtaining pure milk for young children, said that the law might be modified so that establishments might not be registered as dairies unless they complied with certain conditions as regards ventilation, air-space, and cleanliness. At present anyone who wished to sell milk could have his premises registered. He was in favour of licensing rather than registering, stringent conditions to be imposed on licensees as regards the state of their premises, cowsheds, byres, &c., and especially in respect to the arrangements for scalding their milk vessels. In respect to a suitable method of adjudging punishment to those who sell under the title "milk" a watered, skimmed, or separated substitute, Sir Charles Cameron is not in favour of imprisonment or of denouncing the convicted dairy proprietor by placing a placard over his door, for magistrates have generally much difficulty in such cases in bringing home the guilt to any individual. What he proposes is shortly as follows. The Act defines the legal standard of milk—namely, that it must contain 8½ per cent. of non-fatty solids and 3 per cent. of fats. Such legalised milk is poor and he would advise prosecution in all cases in which such milk was sold with punishment, no matter what excuse was made by the dairy proprietor. On the other hand, the "average" standard is 9 per cent. of non-fatty solids and 3½ per cent. of fats and punishment should not be rigidly enforced if it could be shown by the defendant that the milk was below the average standard from poor feeding of the cows, while it was still as it came from the cow and unadulterated. Under the present law no prosecution can take place until the milk is found by the analyst to be under the legal standard, although it may possibly be watered or lowered much below the average standard of good milk.

A Fine Old Poor-law Medical Officer.

The grievances of the Poor-law medical officers of Ireland do not always shorten their lives. Dr. Thomas Woods of Parsonstown has been the medical attendant at the fever hospital and dispensary of Parsonstown union for 40 years. He is close on 90 years of age, a clever man, an ardent cyclist, with his faculties entirely unimpaired. The largest pension under the Poor-law was voted to him the other day and it was well deserved, for, as was stated by Mr. Michael Reddy, M.P., J.P., during all his years of service no complaint was ever made against him. There seems a sort of bathos in the chairman's announcement that the amount of his pension will be slightly over £200 per annum for both his appointments.

Queen's College, Belfast.

For the chair of pathology in Queen's College, Belfast, which was endowed by a Belfast merchant, the late Sir James Musgrave, Bart., and which is now vacant, the medical profession in Ulster are strongly in favour of the appointment of Dr. Thomas Houston who has for the past seven years devoted himself specially to the subject and has been an assistant of the professor who has just resigned. As an indication of the local feeling it is stated that a memorial is to be presented to the president of Queen's College which has been signed by the medical staff of all the Belfast hospitals urging the selection of Dr. Houston and his former pupils are also sending one in his favour. Dr. Houston was a most distinguished student of the Belfast Medical School, in which he is now a lecturer.

The Belfast Board of Guardians.

The Local Government Board has approved of the proposal of the Belfast guardians to acquire the premises known as the Abbey, Whiteabbey, with a view of converting them into an additional workhouse, and it has written saying that it will await the further action of the guardians in the matter. When a letter to this effect was read at a meeting of the board of guardians on Sept. 6th it led to a wild scene. There seems to be great opposition to the scheme on the part of some of the guardians.

Anti-vaccinationists.

The Local Government Board has written to the Belfast guardians commanding them to enforce the Vaccination Act in the union. As a result one of the guardians, a workingman candidate for Parliamentary honours, is to be prosecuted for non-compliance with the Act.

Health of Belfast.

Between July 17th and August 20th 202 cases of zymotic disease were notified in Belfast, including 51 of typhoid fever, 60 of simple continued fever, 49 of scarlet fever, 27 of erysipelas, eight of diphtheria, two each of typhus fever, small-pox, and puerperal fever, and one of membranous croup. The small-pox epidemic is dying out; there have been since the outbreak of the disease 105 patients treated in the small-pox hospital, of whom 98 have been discharged convalescent, three have died, and four remain in hospital. 344 persons were isolated as "contacts" and there are still nine. The death-rate was 17·2 per 1000. In reference to the sanatorium for consumptives it was reported at a meeting of the council on Sept. 6th that a conference was to be held between a subcommittee of the public health committee and some members of the Forster Green Consumption Hospital board of management, the idea being that this hospital should be taken over and developed by the corporation to prevent overlapping.

Small-pox and Typhoid Fever in Armagh.

There are 27 cases of small-pox in the isolation sheds and three cases of typhoid fever in the fever hospital at Armagh.

Treatment of Consumption in Londonderry.

The visiting committee of the guardians of the Londonderry union has recommended that a shed should be erected in the yard attached to the infirmary for the treatment of consumptive patients at a cost of £10, but at the weekly meeting of the guardians on Sept. 10th it was decided, by a vote of 12 to 6, not to do anything, one excuse being the expense!

Sept. 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Overcrowding of the Medical Profession.

LAST week I gave your readers some account of the overcrowding of the medical profession, but bad as it is it is no worse now than in former years; for instance, according to an annual for the year 1825 there were in Paris 716 doctors in medicine, 30 officiers de santé, and 165 surgeons—in all 911—for a population of 717,212. To-day the population is 3,000,000—that is to say, four times as great—and the proportional number of medical men therefore ought to be four times more—namely, 3644. It is, however, not so big, for, as a matter of fact, there are in Paris at the present time only 3427 physicians and surgeons, but, on the other hand, the relative increase in the numbers of *pharmaciens* is very much greater. In 1825 these numbered 252, which number should be, in proportion to the population, 1000 in 1904, but really the number is 1290. The class which has most increased since 1825 is that which

includes midwives and dentists. In 1825 there were 26 midwives and 55 dentists. In 1904 there are 988 midwives and 638 dentists.

Instruction in Tropical Medicine.

There are at the present time in France three institutes of colonial medicine which were founded in the following order: the first at Marseilles, the second at Bordeaux, and the third at Paris. The course of instruction at the last-named covers about two and a half months and the session of 1904 will commence on Oct. 17th and will finish about Christmas. Theoretical instruction and laboratory demonstrations are given at the Faculty of Medicine and clinical instruction at the Hospital of Auteuil. Theoretical instruction and laboratory demonstrations take place every weekday afternoon except Mondays at the practical school. Clinical instruction is given twice a week at 10 o'clock in the morning at the Auteuil Hospital. During the first year of its existence the Paris school had 20 students and during the second year there were 25, of whom 13 were foreigners. The Ministerial Decree dated 1901 approved a resolution of the University Council of Bordeaux that a diploma in colonial medicine of this University should be granted. The municipality and the Chamber of Commerce of Bordeaux both contributed to the expenses of this diploma. During the last period of instruction at Bordeaux, which began on Nov. 16th, 1903, and finished on Jan. 30th, 1904, there were 24 students, of whom 15 who were not sufficiently instructed or had not yet taken their diplomas of doctor in medicine did not go up for the examinations. Nine students, of whom one was a foreigner, obtained the diploma in colonial medicine of the University of Bordeaux. The coming term of instruction will begin next November and will finish in February, 1905. The only question now remaining is as to what occupation shall be found for the young medical men who are sent out from these institutes of colonial medicine. If possible something should be done to assure the diplomates of colonial schools that without infringing the legitimate rights of the military medical men attached to the colonial troops they should be found places as medical officers to consulates or medical officers of civil establishments in the colonies. Certain commercial companies throughout the colonies engage medical men at very fair salaries. At the last colonial congress a motion was passed to be submitted to the Government authorities that medical men might be given administrative functions in the French colonies, but no answer has been returned to this resolution.

Cryoscopy of Milk.

At the meeting of the Academy of Sciences which was held on August 29th M. Guiraud and M. Lasserre communicated the results of some researches which they had recently made upon the state of health of a milk-giving mammal as to the freezing point of milk. The freezing point of pure milk taken at the farm is constant and lies between $-0{\cdot}5°$ and $-0{\cdot}6°$ C. The artificial addition of water always gave results which were in a constant ratio. The state of health of the animal providing the milk has a definite influence upon the freezing point. All milks having a pathological origin, particularly the milk of tuberculous cows, showed a freezing point which was very sensibly lower than that of normal milk.

The International Congress of Tuberculosis.

At this Congress, which will meet in Paris from Oct. 2nd to 7th, 1905, three subjects in each section will be discussed. Three members of the Congress are appointed to open the discussion on each question and one of them must be French. The national foreign committees are already nominating who shall represent them and the French ones have already been appointed. The Pathological Section, of which the president is Professor Lannelongue, has chosen the three following questions: (1) Treatment of Lupus by New Methods, to be opened on behalf of France by M. Jeanselme and M. Chatin; (2) the Early Diagnosis of Tuberculosis by New Methods, to be opened on behalf of France by M. Achat; and (3) the Comparative Study of Tuberculous Diseases, to be opened on behalf of France by Professor Arloing of Lyons. The Social Section, which will be presided over by Professor Landouzy, will discuss the following: (1) the Etiological Factors of Tuberculosis, the opener of the discussion on behalf of France being M. Romme; (2) the Part played by Dispensaries and Sanatoriums in the Fight against Tuberculosis, to be opened on behalf of France by M. Courtois-Suffit; and (3) Insurance against Tuberculosis, to be opened by M. Edouard Fuster.

Fees paid to a Medical Man for Treatment at a Hospital.

The Juge de Paix of the canton of Redon has just delivered an interesting judgment. A doctor of medicine demanded that M. X., a builder, should be compelled to pay him 250 francs for medical attendance which he had given to a workman who was injured while in the employ of M. X. The court condemned M. X. to pay the medical man the sum demanded—that is to say, 250 francs—on the ground that medical men attached to hospitals are not compelled to give gratuitous attendance to hospital patients unless they are admitted as indigent persons and that it cannot be said that workmen who meet with accidents during their employment are to be classed as indigents. The court also found that the sum of 250 francs was by no means too high.

Sept. 13th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Köbner.

Professor Heinrich Köbner, who died in Berlin on Sept. 3rd, was one of the leading specialists on diseases of the skin in Germany. He was born in 1838 at Breslau where he received his medical education and took the degree of M.D. in 1860. He first became an assistant at the Breslau Physiological Institution under the celebrated Professor Heidenhain and afterwards, according to the custom of the time, went to Vienna and Paris where he began to study skin diseases. In Vienna as well as in Paris this special branch of medicine was already receiving attention and instruction could be obtained from competent teachers, whereas in Prussia there was no educational centre except Berlin where dermatology could be properly studied, because diseases of the skin formed an extra subject in the medical or surgical clinics respectively and on that account were rather neglected. When in 1862 Professor Köbner settled in Breslau he opened a private clinic for diseases of the skin where the first courses and lectures in dermatology in Germany were held. In 1869 he was recognised as *privat-docent* and in 1872 was promoted to be extraordinary professor. In 1876 an official dermatological clinic was established by the university and Professor Köbner was appointed director but unfortunately the state of his health soon afterwards compelled him to leave Breslau and to pass some time in a southern climate. Eventually he settled in Berlin where he resided till his death. While studying in Paris he was specially interested in sycosis and his subsequent original work included researches on this disease, on lepra, on psoriasis, on tuberculosis of the skin, and on new growths affecting the skin. His extensive knowledge not only of his own special branch but also of almost every branch of medicine obtained for him one of the largest consulting practices in Berlin and he was celebrated for the accuracy of his diagnosis, even in the most obscure cases. Two years ago he retired from practice on account of failing health but he occasionally attended the meetings of the Dermatological Society, of which he was the founder.

The Title of Professor.

A singular question relative to medical titles has recently arisen in Hamburg. This free city (and the two other free cities, Bremen and Lübeck, likewise) are the only States of the German Empire where honorific titles are rare and the manifold titular distinctions possessed by Government officials and prominent citizens in the other German States do not exist either in medical or in any other circles. Hamburg, which has no sovereign ruler (the Emperor is not to be regarded as sovereign of the German States with the exception of Prussia) but is governed by its Senate, has hitherto abstained from the use of titles and decorations which are of so great an importance throughout the rest of Germany; even men like the celebrated Dr. Kümmel, the chief surgeon to the great Eppendorf Hospital, have only the title of Doctor like any general practitioner of the city of Hamburg. There is no medical councillor or privy medical councillor or sanitary councillor or any similar appellation. A medical man is termed a "doctor" and when he has a government appointment he may be called "medical officer to the port" or "district medical officer of health" or

"chief physician to the hospital" but has no honorary title at all. This state of things, so natural to English people, is evidently a matter of grievance to some leading Hamburg medical men who may possibly feel uncomfortable when they meet their professional brethren of the other German States who are provided with titles. A combination of them, including hospital physicians and surgeons, specialists, and others, have therefore petitioned the Senate that the title of Professor may be granted to those who deliver lectures. They draw attention to the fact that regular courses of post-graduate lectures, though not of an official character, have been delivered in Hamburg for many years. They say that post-graduate study, as in Prussia, should be recognised by the State and that Hamburg by its excellent hospitals and other medical institutions may become the seat of a medical school like Cologne. The teachers of the prospective school and meanwhile those of the unofficial post-graduate lectures should have the title of Professor granted to them which, as they explain, is the usual title in Germany for medical men engaged in academical teaching. The demands of the above combination have, however, led to a protest on behalf of the medical profession, the majority of whom do not wish the old customs of Hamburg to be abandoned and are, moreover, afraid that the titled medical men may be regarded by the public as more competent than others. This question has caused some discussion from both sides in the medical and lay press but the Senate has not yet decided the matter.

Sept. 13th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Mosquitoes in New Jersey.

FOR the past two years strong efforts have been made by the health authorities of New Jersey to banish, or at least to decrease, the number of mosquitoes in that State. Unfortunately, endeavours in this direction have not been attended with a large measure of success. Drainage has been the measure most widely relied upon but it would seem that the scheme has failed probably because it was not conducted in a sufficiently thorough manner. In Newark, New Jersey, for instance, a city partly surrounded by marshes, the sum of $4500 had been appropriated to carry out a system of draining. The result has been very disappointing, for the ditching, instead of draining off the water, has converted the swamp into a huge pond and matters, so far as mosquitoes are concerned, have been worse than ever before. Mosquitoes in the vicinity of Newark have been prevalent during the present summer and from all parts of New Jersey comes a similar story. The truth undoubtedly is that only partial measures have been adopted, whereas if mosquitoes are to be got rid of in a district a thorough system of drainage must be undertaken. Of course, the expense will be heavy but the results will be commensurate with the money expended.

Medical Exhibits at the World's Fair.

The medical exhibits at the World's Fair are many and varied. With the exception of those of the Marine Hospital Service and of the Medical Department of the Army and Navy, in the Government Building, they are all in the Educational Building. The German exhibit is on the whole the best. Eight sections are devoted to the medical sciences in the German exhibit. Among the most interesting features of this exhibit is the section given over to the exhibition of the Roentgen rays. Six sections contain the main exhibition of the medical department, in each section one branch of the medical sciences being represented. The surgical exhibit is arranged in two sections, one of which represents the Royal Surgical Clinic of Berlin and the other the Royal Surgical Clinic of Breslau. A room adjoining the surgical section is devoted to the pathological exhibit. A section is also set apart for the exhibit of internal medicine. The entire German exhibition of medical sciences is remarkable for the thorough manner in which it has been conceived and carried out and reflects great credit upon those responsible for its arrangement.

Medical Men and Politics in the United States.

The question of medical men and politics is greatly exercising the minds of the profession in the United States. As is generally the opinion in England, it is thought here by a large number of medical men that the practitioner should take no part in politics. However, a change is apparent as regards this point of view and many influential medical men are now insisting that they should share in politics both for their own sakes and in the interests of the public at large. The argument is advanced that in a great many ways the medical man is peculiarly well fitted to take part in politics. He is educated, well-read, and has especially good opportunities of judging human nature and is generally in a position to speak with authority on certain matters. It is not argued that he should take so much an active part in politics as to influence votes. Upon questions of public health and upon all matters concerning the health of the community, as well as upon purely medical questions, he is better adapted than members of any other class to pass an authoritative opinion. In fact, much sickness might be avoided if the advice of medical men were asked and acted upon by municipalities and the Government. It is further contended that the entrance of medical men into politics would tend to raise the tone of political life and to decrease the corruption so prevalent in politics nowadays. The American Medical Association at its recent meeting at Atlantic City took cognisance of the matter and several of its more prominent members urged strongly that medical men should interest themselves in politics. The vice-president of the association indeed advocated the formation of a national department of health, represented by a physician at its head, who should be a member of the Cabinet.

Typhoid Fever in the Borough of the Bronx.

In that part of greater New York known as the Bronx a somewhat serious epidemic of typhoid fever has broken out. A reservoir is being constructed there, working upon which are a large number of Italian labourers, and it is among these that the disease originated. The Italians in New York are a constant menace to the public health owing to the insanitary conditions in which they live. They herd together like cattle and have not the slightest rudiments of proper sanitation. Fear is expressed that the present epidemic of typhoid fever in the Bronx may lead to a contamination of the water-supply and attention is again drawn to the fact that there is no efficient system of filtration of the public water-supply of New York. Indeed, New York is one of the few large cities of the world that have not adopted modern filtration as a precautionary measure against water infection, although such methods have been urged times without number. To state the case plainly, the metropolis of the United States, a large proportion of the inhabitants of which are dependent on a water-shed badly protected, is content to run risks which can be easily obviated by modern science. Physicians as a rule do not care to press the matter. On occasions the medical journals will utter warnings. The *New York Medical Record* has done so frequently. The great stumbling block, however, to the carrying out of an efficient system of water filtration is the large primary cost. For this reason all municipal administrations have fought shy of the matter.

Death of Dr. William R. Pryor.

Dr. William R. Pryor, one of the best known physicians of New York city and professor of gynæcology in the New York Polyclinic Hospital since 1884, died on August 27th from pneumonia. Dr. Pryor, who was only 43 years of age, was considered among the best of the gynæcologists of America. He was the son of Supreme Court Justice Roger A. Pryor. The deceased probably owed his death to his devotion to duty, as in addition to a large practice he gave much of his time to work amongst the poor.

Sept. 3rd.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Bubonic Plague.

A CASE of bubonic plague, the tenth since the beginning of the present outbreak, was reported in Sydney on August 3rd. Three of these ten cases have proved fatal. The staffs of men employed by the Board of Health and Sydney city council continue a persistent crusade against rats and still find infected rats among those destroyed. No fresh cases have been reported from the other States.

Federal Quarantine.

The report of the recent Interstate Quarantine Conference has been made public. The draft Federal Quarantine Bill provides for the creation of a central quarantine department to which all the functions of the several State departments in this connexion would be transferred. The federal office would be controlled by a director-general who, it is proposed, should be paid a salary of £1800 a year, while he would have a capable assistant and a sufficient staff to discharge the routine duties of a bureau. The Bill enumerates the diseases which call for uniform quarantine regulations as small-pox, cholera, bubonic plague, leprosy, and typhus fever, while the Governor-General in Council—that is, the Ministry of the day—will be given authority to proclaim other diseases if necessary. Plenary powers are conferred upon the central department and the State departments—which will act under its directions—to carry out the rules laid down in the Bill. At the present time the local governments have to bear a large proportion of the cost of quarantining travellers who arrive from oversea. The conference suggested that a quarantine rate might be levied upon shipping to create a fund for such purposes and, further, that the insurance companies, whose interest it is to prevent epidemics, might also be asked to contribute toward this fund. On the subject of compulsory vaccination—as, indeed, on all other matters, with one exception—the conference was unanimous. It declared that vaccination should be made compulsory throughout the Commonwealth. The evil effects of non-compliance with this system were dwelt upon and it was urged that the Commonwealth should obtain from the States the right to control vaccination in all its phases. The Minister of Customs also asked the conference to supply him with general suggestions on some other points. It has replied by recommending that the Commonwealth should approach the States with a view to taking charge of all matters relating to the adulteration of foods and of vital statistics, while it contended that there should be a completely equipped laboratory attached to the central health department, where instruction might be given to those seeking it. The conference did not suggest that any action should be taken by the Commonwealth in respect to phthisis, while it declined to tender advice upon quarantine in relation to animals because it considered that veterinarians are better qualified to express opinions upon these matters. Friction has been caused between several of the States by their conflicting plague regulations. The experts were asked if they could devise uniform rules for the treatment of plague outbreaks. They have answered that the draft Bill covers all that is necessary but that if immediate action is considered desirable a special conference will have to be held to draw up rules.

The Health of Pilots.

The P. and O. steamship *Australia* was recently wrecked at Port Phillip Heads owing to the pilot in charge making a mistake about the lights. It appears that he was in bad health and had defective sight. The New South Wales Government has issued a regulation that every pilot in New South Wales shall, at any time when required by the superintendent, submit himself for examination by a Government medical officer, and further, that no person appointed as a first-class pilot shall be deemed eligible to continue to hold such position and to discharge the duties unless at least once in each year he attends before a medical officer appointed by the Treasurer and obtains a certificate that he is in good health and not afflicted with any bodily or mental complaint or infirmity rendering him unfit to perform his duties, particularly as to sight, hearing, and speech.

The Australasian Trained Nurses' Association.

The annual report of the Australasian Trained Nurses' Association, presented at its annual meeting, stated that 689 general and 174 midwifery nurses were registered. The question of State registration or incorporation of the association was being carefully considered by the council which hoped to be able to bring a scheme before the association during the coming year. The council had drawn up rules for the establishment of State branches of the association. The meeting discussed the position of midwifery nurses who had never been placed on an equal footing with the general nurses in the association; friction had resulted in consequence, ending in the formation of a separate obstetrical nurses' society. The meeting decided that the obstetric branch should govern its own affairs but that its decisions must be confirmed by the general council of the association. The midwifery nurses had a committee of their own and three representatives on the general council; they also had the right to attend all lectures and to speak at all meetings of the association. It was hoped that these concessions would have the desired effect of merging all the nurses in one association. The following officers were elected:—President, Mr. E. T. Thring; vice-president, Dr. T. H. Fiaschi; honorary treasurer, Sir James Fairfax; and honorary secretaries, Dr. C. B. Blackburn and Miss Kendal Davies.

The Balmain Hospital and its Staff.

It will be remembered that the honorary staff of the Balmain Hospital resigned in a body as a protest against the appointment of Dr. P. J. Kelly as paid medical officer to the hospital. A new staff was appointed and the committee congratulated itself on having satisfactorily settled the affair. But it soon found that matters were anything but satisfactory. Patients ceased to come and soon there was no work for the staff to do. The committee alleged that this result is due to a boycott of the hospital by the profession, the medical men who had previously sent patients to the hospital securing beds for them in other institutions. It is quite possible, however, that the patients themselves may have no confidence in the new staff. The outcome of the situation is that Dr. Kelly has resigned his position and his resignation has been accepted. Another difficulty now faces the committee. The United Friendly Societies at Balmain support the hospital financially to a considerable extent. They consider that Dr. Kelly, their medical officer, has been made to suffer for his action in accepting re-appointment as medical officer to their dispensary when his colleagues withdrew on the advice of the local branch of the British Medical Association. Consequently the friendly societies now threaten to withdraw their financial support from the hospital. One deduction to be drawn from the episode is that the hospital is unnecessary. There can be no question that all through Australia too many hospitals and charities exist, competing for contributions and overlapping in their work.

Hospital Affairs.

At the annual meeting of the supporters of the Austin Hospital for Incurables of Victoria reference was made to the new "Kronheimer" wing for advanced cases of consumption. It was stated that the building would be ready to receive patients in about six weeks and that the opposition to its erection was dying out. Usually from 25 to 30 more cases of advanced consumption applied for vacancies than could be accommodated and these were a danger to the community outside the institution.—At the annual meeting of the supporters of the Victorian Sanatoriums for early cases of consumption the report stated that the accommodation was quite inadequate and the committee had secured a site of 200 acres adjoining the summer sanatorium at Macedon. The site for a winter sanatorium had not yet been decided. The Government had offered the Viticultural College at Rutherglen and the committee had informed the Premier that it would be glad to have the use of it but no reply had been received. During the year 148 patients had been admitted. 80 had been discharged with the disease arrested, 20 had been partially cured, 30 had been discharged as incurable, and three had died.—At the annual election of members of the committee of the Melbourne Hospital some new blood was infused into that body by the return of three new members, including a member of the surgical staff, Dr. W. Moore. It is many years since any member of the staff or any medical man has been on the committee.

Number of Medical Men in New South Wales.

The returns of the last census show that in New South Wales there are 799 medical practitioners, including 14 women, in a population of nearly 1,500,000.

Charge against a Medical Man.

The city coroner of Sydney held an inquest on the body of a young woman who died at the Lewisham Hospital on July 22nd from septic peritonitis after the induction of premature labour. In her dying depositions she stated that an illegal operation had been performed by Dr. Eichler of College-street, Sydney. The jury returned a verdict of manslaughter and Dr. Eichler was committed to take his trial at the Criminal Court. He was unable to attend the inquest owing to nervous prostration.

Dinner to Dr. Neild.

The friends of Dr. J. E. Neild of Melbourne in the medical, legal, and other professions celebrated the eightieth anniversary of his birthday by entertaining him at dinner. Dr. Neild in his time has played many parts. He was for many years a dramatic critic on the press in the days of the Keans, Barry Sullivan, Walter Montgomery, and Ristori, and it is difficult now to estimate the importance of the position he then held. He is the oldest lecturer in the medical school on forensic medicine and a recognised authority on medico-legal questions. As a literary man he had always singularly graceful gifts. He is a profound Shakespearian scholar and was for many years president of the Shakespeare Society. He has always strongly supported the dignity of the medical profession and been a warm friend to its members. In replying to the toast of his health he said that he thought he had made a mistake in engaging in so many occupations. He could not honestly say he was in good health, but he was greatly cheered and comforted as well as flattered by the reception that had been given to him.

Memorials to Medical Men.

A handsome memorial tablet has been erected in the Kew Church of England to the late Dr. W. Butler Walsh by his many friends.—At the Horsham Hospital a tablet has been erected bearing the following inscription: "A public tribute of love and respect to the memory of Robert Henry Ritchie, M.B., Ch.B., obiit 1903."

Visit of Professor Senn.

Professor Nicholas Senn of Chicago has been paying a flying visit to Australia. He spent a few days in Sydney and Melbourne, inspecting the hospitals and seeing something of the surrounding country, and will have a day in Adelaide whence he goes to India.

August 9th.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Constantinople:* Dr. Deycke, the newly appointed director of the medical school, has been granted the title and rank of Pasha.—*Freiburg:* Dr. Bumke has been recognised as *privat-docent* of Psychiatry.—*Jena:* Dr. Otto Pankow has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Halle:* Dr. Wilhelm Stoeltzner of Berlin has been appointed Extraordinary Professor of Paediatry in succession to Dr. Siegert who goes to Cologne.—*Iurieff (Dorpat):* Dr. Guĕorguievski has been recognised as *privat-docent* of Surgery.—*Leipsic:* Dr. K. Rabl has been appointed to succeed Professor His as Professor of Anatomy and Director of the Anatomical Institute.—*Marburg:* Dr. Ludwig Brauer of Heidelberg has been appointed to an Extraordinary Professorship with charge of the medical polyclinic in connexion with the University.—*Paris:* Dr. Emilio Alfieri of Parma has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Rome:* Dr. G. Alessandrini has been recognised as *privat-docent* of Medical Parasitology.—*Turin:* Dr. Sprecher of Bologna has been recognised as *privat-docent* of Dermatology.—*Vienna:* Dr. Meyer of Marburg has been appointed Professor of Pharmacology and Dr. Moeller as Professor of Pharmacognosis.—*Zürich:* Dr. Wilhelm Brünings has been recognised as *privat-docent* of Physiology.

DORCHESTER COUNTY ASYLUM.—The visiting committee of this institution has erected and just opened "Herrison House" for the reception of 100 patients of the private class who are mentally afflicted. "Herrison House" is without any of the appearances of an institution and stands in its own gardens overlooking the picturesque valleys of the Frome and Cerne. The Dorchester Asylum was the first to make provision for the reception of private patients under Section 255 of the Lunacy Act, 1890, and this further development, which has the approval of the Commissioners in Lunacy, is the result of years of experience. At their last visit on July 13th, 1904, the Commissioners in Lunacy thus expressed themselves: "We have been specially interested in and pleased with Herrison House, the home for private patients, which has been completed and will be partially occupied next Friday. This building, which has been constructed and decorated in the best taste, affords excellent accommodation and reflects great credit upon Dr. MacDonald, who must have expended much time and labour upon it." Dr. P. W. MacDonald is the medical superintendent and application should be made to him for further details and prospectus.

DONATIONS AND BEQUESTS.—The late Mrs. R. H. Wood has bequeathed £500 to the funds of the Sidmouth Cottage Hospital.

TEIGNMOUTH HOSPITAL.—As a result of the recent fête which was held at Teignmouth (Devon) the sum of £220 has been handed to the treasurer of the local hospital.

BRISTOL GENERAL HOSPITAL.—The treasurer of the Bristol General Hospital has received £1050 from anonymous donors towards the deficit balance of that institution.

MEDICAL INSPECTION OF SCHOOLS.—The action of the Gloucestershire county council in appointing a medical inspector of schools and school children and the report of Dr. Myer Coplans are indications of the need of such supervision.

DISTRICT NURSING IN EXETER.—At the meeting of the St. Thomas's (Exeter) board of guardians held on Sept. 9th it was decided that no contribution should be given towards the expense of district nursing unless the nurse was duly qualified to the satisfaction of the district medical officer.

HEALTH OF SIDMOUTH.—The medical officer of health of Sidmouth (Dr. T. H. S. Pullin) in his report for 1903 states that the births numbered 72, being equal to a rate of 16·5 per 1000. The total deaths were 63, or at the rate of 14 per 1000, but excluding visitors the death-rate was 11·3 per 1000. Dr. Pullin urges the necessity of providing a permanent isolation hospital which he considers a matter of paramount importance in a health resort.

THE WATERS OF SHIRA.—Not far from Krasnoyarsk in Siberia, says the *Sciet*, is the lake of Shira which is famous for its medicinal warm waters. This year, however, the visitors have been less numerous than usual although the prices for accommodation have been reduced. The government makes an allowance of ten baths per day for the poor. The temperature of the waters of the lake stands always above 68° F.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Friedrich Wilhelm Zahn, professor of pathological anatomy in the University of Geneva, at the age of 59 years.—Dr. Alexander Auerbach of Berlin, where he worked for many years at medical chemistry in conjunction with Professor Nitze.—Dr. Kookyer, emeritus professor of medicine in Groningen.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—The following gentlemen have been elected officers of the society for the session commencing October, 1904:—President: Mr. W. Bowen Davies. Vice-Presidents: Dr. Frederic Bagshawe, Dr. G. W. Hamilton Cumming, Mr. H. Shirley Jones, Dr. R. Fortescue Fox, Dr. Joseph Groves, Dr. Percy G. Lewis, Dr. W. Black Jones, Dr. G. A. Leon, Mr. A. G. S. Mahomed, Mr. Ernest Solly, Mr. George Hobson Thompson, and Dr. Leonard Ll. B. Williams. Council: Dr. A. Reuben Aubrey, Dr. G. A. Bannatyne, Dr. Robert Thomson, Mr. John B. Berry, Dr. William Bain, Dr. John Braithwaite, Dr. Samuel D. Clippingdale, Dr. E. Frost, Dr. A. H. Bampton, Dr. J. G. Douglas Kerr, Dr. F. M. Pope, Dr. W. J. Tyson, Dr. James Little, Dr. Arthur P. Luff, Dr. Arthur W. Thomas, Dr. Henry McLure, Dr. F. Stanley Noble, Dr. L. G. S. Molloy, Dr. W. Moxon, Dr. F. A. de T. Mouillot, Dr. S. T. Pruen, Dr. Douglas A. Reid, Mr. Ernest Symes, Dr. Abraham Thomas, Dr. E. Symes-Thompson, Mr. G. H. Ward-Humphreys, Dr. Christopher Vise, Dr. F. Parkes Weber, Dr. Alfred F. Street, and Dr. John Temple Leon. Chairman of Council: Dr. W. V. Snow. Honorary treasurer: Dr. Harry Campbell. Librarian: Dr. Morgan Dockrell. Honorary secretaries: Mr. Shirley Jones and Dr. Septimus P.

Sunderland. A number of gentlemen are also vice-presidents without a seat on the council unless specially elected.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next examination for the certificate in nursing and attending on the insane will be held on Monday, Nov. 7th. Candidates should obtain from the registrar, Dr. Alfred Miller, Hatton Asylum, Warwick, a schedule to be filled up, signed, and returned to him at least four weeks before the date fixed for the examination. Monday, Oct. 10th, will be the last day upon which, according to the rules, candidates can enter their names for the November examination.

BOOKS, ETC., RECEIVED.

ADLARD AND SON, Bartholomew-close, E.C.

The Differential Diagnosis of Syphilitic and Non-Syphilitic Affections of the Skin, including Tropical Diseases. A Survey for Medical Practitioners and Students. By George Pernet, Assistant to the Skin Department, University College Hospital, London. Price 6s. 6d. net.

CASSELL AND COMPANY, LIMITED, London, Paris, New York, and Melbourne.

The Students' Handbook of Surgical Operations. By Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., F.R.C.S., Sergeant Surgeon-in-Ordinary to H.M. the King, Surgeon-in-Ordinary to H.R.H. the Prince of Wales, Consulting Surgeon to the London Hospital. New edition, revised by the author and Jonathan Hutchinson, Jun., F.R.C.S., Surgeon to the London Hospital, Examiner in Surgery, Royal Army Medical Department. (Abridged from the Author's "Manual of Operative Surgery.") Price 7s. 6d.

CHURCH MISSIONARY HOUSE, Salisbury-square, E.C.

Preaching and Healing. The Report of the C.M.S. Medical Mission Auxiliary for 1903-04. Price not stated.

FURNIVAL, W. J., Stone, Staffordshire.

Leadless Decorative Tiles, Faience, and Mosaic, comprising Notes and Excerpts on the History, Materials, Manufacture and Use of Ornamental Flooring Tiles, Ceramic Mosaic, and Decorative Tiles and Faience, with Complete Series of Recipes for Tile-bodies, and for Leadless Glazes and Art-Tile Enamels. By William James Furnival, Research Ceramist and Consulting Potter, Honours Medallist in Pottery and Porcelain, City and Guilds of London Institute. The work includes contributions by Stephen W. Bushell, Esq., M.D., C.M.G., C. Stanley Clarke, Esq., J. H. Marshall, Esq., and Ambrose Wood, Esq. Price not stated.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Die Entwickelung der Dermatologie in Berlin. Eine historische Skizze. Von Dr. Paul Richter, Specialarzt für Hautkrankheiten in Berlin. Price M.1.

V. Internationaler Dermatologen-Kongress abgehalten in Berlin vom 12-17 September, 1904. Verhandlungen und Berichte. Herausgegeben von Sanitätsrat Dr. O. Rosenthal, General-Sekretar. I. Band. Price M.10.

LEHMANN, J. F., München.

Lehmann's Medizin. Handatlanten. Band V. Atlas und Grundriss der Haut-Krankheiten. Von Dr. Franz Mracek, k.k.o.ö. Professor für Dermatologie u. Syphilis an der Universität in Wien. Zweite vielfach verbesserte und erweitete Auflage. Price M.16.

LEMCO, 4, Lloyd's-avenue, E.C.

Lemco Dishes for all Seasons. By Eva Tuite. Price 1s.

MURRAY, JOHN, 50A, Albemarle-street, W.

Handbook of Physiology. By W. D. Halliburton, M.D., F.R.S., Professor of Physiology, King's College, London. Sixth edition. (Being the Nineteenth Edition of Kirkes' Physiology.) Price 15s. net.

Nature Teaching, based upon the General Principles of Agriculture. For the Use of Schools. By Francis Watts, B.Sc., F.I.C., F.C.S., Government Analytical and Agricultural Chemist, Leeward Islands, West Indies, and William G. Freeman, B.Sc., A.R.C.S., F.L.S., Superintendent of the Colonial Collections, Imperial Institute. Price 3s. 6d.

SAUNDERS, W. B., AND COMPANY, 9, Henrietta-street, Covent-garden, W.C.

A Text-book of Pathology for Practitioners and Students. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. Price 21s. net.

Practical Materia Medica for Nurses. By Emily A. M. Stoney, Graduate of the Training School for Nurses, Lawrence, Mass. Second edition, thoroughly revised. Price 8s. net.

The Practical Application of the Röntgen Rays in Therapeutics and Diagnosis. By William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois, and Eugene Wilson Caldwell, B.S., Director of the Edward N. Gibbs X-ray Laboratory, University and Bellevue Hospital Medical College, New York. Second edition, thoroughly revised and enlarged. Price 21s. net.

SKIPPER, CHARLES, AND EAST, 49, Great Tower-street, E.C.

Statistical Tables of the Patients under Treatment in the Wards of St. Bartholomew's Hospital during 1903. By the Medical Registrars, H. Morley Fletcher, M.D. Cantab., F.R.C.P., J. H. Drysdale, M.D. Cantab., F.R.C.P., and the Surgical Registrar, R. C. Bailey, M.S. Lond., F.R.C.S. Price not stated.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION (Secretary, W. D. Haggard, Nashville, Tenn., U.S.A.).

Transactions of the Southern Surgical and Gyneco'ogical Association. Vol. XVI. Sixteenth Session, held at Atlanta, Georgia, Dec. 15th, 16th, and 17th, 1903. Edited by W. D. Haggard, M.D. Published by the Association. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

DUNCAN, J. D., M.B. Edin., has been appointed Medical Officer of the Arbroath Epidemic Hospital.

HAYNE, LOUIS B., M.D., B.C. Cantab., has been appointed Honorary Medical Officer to Out-patients at the Harrogate Infirmary.

HOPE, G. J. B., M.B. Edin., has been re-appointed Medical Officer of Health to the Scarborough Rural District Council.

HUNT, A. W. D., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Surgeon to the Loyal Crown Lodge of Oddfellows at Chagford (Devon).

KIRTON, MARTIN A., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Public Vaccinator for the No. 2 District by the Devonport Board of Guardians.

LEVICK, G. K., M.B. Lond., has been appointed Medical Officer of Health to the Havant Urban District Council.

MOSTYN, SYDNEY G., M.B. Oxon., has been appointed Medical Officer of Health of South Shields.

RYAN, RICHARD P., F.R.C.S. Irel., has been appointed Public Vaccinator for the First District by the Devonport Board of Guardians.

SAYER, THOMAS, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator for the Kirklington District of the Bedale Union and for the Pickhill District of the Thirsk Union; and has also been appointed Medical Officer of Health of Kirklington, Yorks.

THOMPSON, S. W., M.R.C.S. Eng., has been appointed Medical Officer of the Calvert-road Homes in the Greenwich Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 and fees.

BIRMINGHAM, ASTON UNION WORKHOUSE AND COTTAGE HOMES, Gravelly Hill.—Resident Assistant Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £30 per annum, with board, lodging, and washing.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Second Assistant Anæsthetist.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Second House Physician for six months. Salary at rate of £30 per annum, with board, washing, and residence.

CROYDON UNION INFIRMARY, Mayday-road.—Resident Assistant Medical Superintendent and Dispenser. Salary £130 per annum, increasing to £160, with apartments, rations, and washing.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Eight Clinical Assistants.

GLASGOW, UNIVERSITY OF.—One Examiner each in Chemistry, Physics, Physiology, Materia Medica and Therapeutics, and Pathology, salary £50 each; Examiner in Chemistry, salary £50 per annum; Examiner in Physics, salary £50 per annum; two Examiners each in Medicine (Systematic and Clinical) and Surgery (Systematic and Clinical), salary £80 each.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HULL ROYAL INFIRMARY.—House Surgeon, unmarried. Salary 80 guineas per annum, with board and apartments.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, increasing to £150, with rooms and attendance.

KIRKBURTON, NEAR HUDDERSFIELD (STORTHES HALL ASYLUM).—Assistant Medical Officer. Salary £140 per annum, with rooms, board, attendance, and washing.

LEITH HOSPITAL.—House Physician, Physician in the Out-door Department, and Assistant House Surgeon, all for six months.

LINCOLN COUNTY HOSPITAL.—Junior Male House Surgeon for six months. Honorarium of £25, with board, residence, and washing.

LIVERPOOL, CITY OF, INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.
LONDON HOSPITAL.—Assistant Physician.
MANCHESTER, ANCOATS HOSPITAL.—Resident House Physician. Salary £80, with board, residence, &c.
MANCHESTER CHILDREN'S HOSPITAL.—Senior Physician and Junior Surgeon. Honorarium £90 each.
MANCHESTER, MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary £100 per annum, with board, lodging, and washing.
NEWCASTLE-UPON-TYNE CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer. Salary £100 per annum, rising to £150, with board, lodging, &c.
NEW HOSPITAL FOR WOMEN.—Clinical Assistant (female).
PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £60 per annum, with board, washing, &c.
READING, ROYAL BERKSHIRE HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, lodging, and washing.
ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.
ST. GEORGE'S HOSPITAL, S.W.—Assistant Physician.
SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Clinical Assistants.
SEAMEN'S HOSPITAL SOCIETY, Greenwich, S.E.—Junior Resident Medical Officer, Dreadnought Hospital, Greenwich. Salary £40 per annum, with board, residence, and washing. Also House Surgeon, Branch Hospital, Royal Victoria and Albert Docks, E. Salary £50 per annum, with board, residence, and washing.
TOTTENHAM HOSPITAL.—House Physician for six months. Salary £60 per annum, with board, residence, and laundry.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.
WEST LONDON HOSPITAL, Hammersmith-road, W.—Officer in X-Ray Department.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BRUCE PEARSON.—On Sept. 8th, at the Cottage, Buckingham, the wife of Bruce Pearson, L.R.C.P. & S., of a son.
BURLAND.—On Sept. 11th, at 32, Marmion-road, Sefton-park, Liverpool, the wife of Charles Burland, M.D., of a son.
FAICHNIE.—On Sept. 3rd, at the Nursing Home, Churchfield-road, Ealing, the wife of Major N. Faichnie, R.A.M.C., of twin daughters.
GODDARD.—On August 21st, at Naval Hill, Bloemfontein, Orange River Colony, the wife of Captain G. H. Goddard, R.A.M.C., of a son.
HAMMOND.—On Sept. 4th, at Carlyon, Shanklin, Isle of Wight, the wife of J. A. B. Hammond, M.B., of a daughter.
HUTCHINSON.—On Sept. 5th, at Loneside, Haslemere, the wife of R. J. Hutchinson, M.R.C.S., L.R.C.P., of a son.
LESLIE.—On Sept. 5th, at Fairwater, Evesham, Worcestershire, the wife of L. F. Leslie, M.R.C.S., L.R.C.P., of a son.
SAFFORD.—On August 24th, at Blindwood, Ranikhet, North-West Province, India, the wife of Captain Arthur H. Safford, R.A.M.C., of a daughter.

MARRIAGES.

BUNTING—WALKER.—On Sept. 8th, at Wesley Chapel, Bolton, by the Rev. Thomas Allen, D.D., William Hartley Bunting, M.D., F.R.C.S. Edin., to Edith Maude, daughter of Mr. Thomas Walker.
COOPER—LUDLOW.—On Sept. 7th, at the parish church, Knowle, Warwickshire, by the Rev. T. W. Downing, Walter Edward Cooper, M.R.C.S., L.R.C.P., to Florence Marion, daughter of Lieutenant-Colonel W. R. Ludlow.
FITZGIBBON—PEARD.—On Sept. 6th, at the parish church, Kilroan, Co. Cork, by the Rev. Canon W. F. Archdall, Maurice FitzGibbon, M.B., B.Ch., to Mabel Anna, daughter of Mr. William H. Peard.
KENNEDY—BABINGTON.—On Sept. 7th, at St. Paul's Church, Glenageary, by the Rev. E. Robinson, William Player Kennedy, M.D., to Alice Frances L'Estrange, daughter of the late Mr. William W. Babington.
MARTIN—HOLMES.—On August 3rd, at St. Peter's Church, Melbourne, by the Rev. Archdeacon Hindley, Alfred E. Martin, M.B., B.C. Cantab., to Ardagh Holmes, daughter of Mr. John Holmes.
SMITH—JENKINSON.—On Sept. 7th, at St. Paul's Church, Kersal, Manchester, by the Rev. F. T. Woods, Harry Graham Smith, L.R.C.P. & S. Edin., to Margaret Jenkinson.
TURNER—NORMAN.—On Sept. 7th, at St. George's, Edgbaston, Birmingham, Alan Charles Turner, M.R.C.S., L.R.C.P., D.P.H., to Adelaide Maud, daughter of the late Mr. George Bennett Norman.

DEATHS.

DICKINSON.—On Sept. 6th, at Trebrea Lodge, Tintagel, William Lee Dickinson, F.R.C.P., aged 40.
RUSHTON.—On Sept. 11th, at Jordangate, Macclesfield, John Latham Rushton, jun., M.R.C.S. Eng., L.R.C.P. Lond., aged 28 years, elder son of John Latham Rushton, M.D.
WOOD.—On Sept. 5th, at Glengall, Hurstpierpoint, Sussex, Joseph Wood, Fleet Surgeon, R.N. (retired), aged 62.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

CASTOR OIL IN ANCIENT EGYPT.

M. Loret, who for many years has devoted himself to the study of the plants known to the ancient Egyptians and their pharmacopœia, has recently in the *Revue de Médecine* been discussing the hieroglyphic name of ricinus and the application made of it by their medical men. He shows that the plant they knew was the African and Arabian variety and that they utilised it for the production of oil and other purposes centuries before the Indian type of ricinus was known to the Greeks. Herodotus tells us that the Egyptians derived the oil from it by boiling the grains, whilst Dioscorides and other classic authors only attribute a cold process of extraction to them. It was used for medical remedies and lighting and anointing. Herodotus and Diodorus call the oil of ricinus κύκι, whilst Pliny and Dioscorides assign that title, which seems an Egyptian word, to the plant. M. Loret proves that the Egyptian name was Tekem, which Brugsch considered to be the olive; it really consists of two words first noticed in a Demotic papyrus in 1881 by Revillout. M. Loret in his paper then proceeds to notice all the applications of Tekem in the Ebers medical papyrus. This important document for medical history will be much more intelligible when the great medical papyrus acquired for the University of California is edited because it is a sort of duplicate of the Ebers manuscript, though the list of diseases and remedies follows a somewhat different order. The comparison of the two treatises will, it is hoped, be made by Baron Dr. Oefele, whose competence for the task is great. M. Urbain Bouriant, the French Egyptologist, who for the last few years bestowed all his energy upon the translation and explanation of a Coptic medical papyrus discovered at Meshaikh and now preserved in the French Archæological Institute at Cairo, died last year at the early age of 54 years. During his illness he still continued working at his edition of the papyrus, and M. Pierre Bouriant writes that his relative has left him such complete notes and wise counsels concerning the manuscript that he can finish the work for him and place it upon his tomb "comme un hommage d'amour et de vénération."

A NEW ONE-TWELFTH INCH OBJECTIVE.

WE have received for trial a one-twelfth inch oil immersion lens made by Mr. Henry Gowland, Selsey, Chichester, the cost of which is only £2 15*s*. We have submitted the lens to a thorough trial and are able to report most favourably upon it. The definition is good; it admits plenty of light and affords a satisfactory field. It has one defect that, we think, might be remedied without difficulty. The lower milled head is too projecting, consequently when removing the lens from the microscope the adjustment of the constituent lenses is apt to be disturbed. We can recommend the lens as a thoroughly good one, although it can be obtained at a low price.

HOSPITALS AND DISPENSARIES.

To the Editors of THE LANCET.

SIRS,—About this time last year you were kind enough to give admission to a letter in which I made the suggestion that an alliance between the hospitals and the dispensaries (provident, charitable and semi-charitable, &c.) presented certain advantages. By this alliance the dispensaries would be the primary public portals to the hospitals, except in cases of accident, urgency, and perhaps those cases sent up by medical men. The advantages which such a scheme presents are: 1. Stoppage of leakage of hospital funds in directions inexpedient and inappropriate. 2. Stoppage of the fearful waste of time, injurious both to the public and to the hospitals, in the present overcrowded condition of the casualty and out-patient departments. 3. Prevention of the pauperising effect of the present free and unchecked system of medical relief, with corresponding increase of thrift and self-dependence. 4. Enhanced means of study by students of those complaints often somewhat cursorily regarded as of slight importance but which experience has shown to constitute the bulk of cases in actual practice. 5. Extended scope for remunerative occupation of newly qualified medical men. 6. The scheme could be carried out without any appeal for funds. These ends would be attained by placing the dispensaries freely open to students of the hospital to which they were affiliated and encouraging them to assist in the work there carried on. The dispensaries from their more accurate local knowledge would act as invaluable filters, their independent position enabling them to exercise discretion as to the distribution of hospital relief.

The cases would there be sorted: those fitted for the dispensary or casualty treatment retained, the more complex or serious passed on to the hospital either for admission to the wards or for more recondite treatment than would be available at a dispensary, into the special and out-patient departments, and so on. Experience even of the present working of these dispensaries shows clearly that after a short period for adjustment to altered circumstances they would certainly be self-supporting and possibly a source of income. There

would be a "provident" side attached to each such affiliated dispensary and a small charge made to all applicants not subscribing to the provident fund. Such arrangement would tend to prevent loss of self-respect in the applicant. There is practically a very small proportion of the populace which would be unable to meet this charge and such as were or are so would surely be fitting cases for the Poor-law. Of course, such a scheme requires a considerable amount of detailed working out and a letter like this is not the place in which such details can be explained. But I think that many, if not all, will see that some such plan would go far to meet the difficulties under which we at present labour and that methods are conceivable by which the idea of combining the hospitals and dispensaries and thus securing the above advantages could be worked out.

One such method I foreshadowed in my former letter, but I am quite prepared to find that many of its details might be improved to the advantage of the ultimate arrangement of the scheme. If there be one fact which study of this question of hospital abuse through a period of 20 years has rendered clear—at least to me—it is that the remedy must be found in outside action. The evil can never be checked by the hospitals themselves. Here, then, is a suggested means to the end desired. I venture to ask you, Sirs, once more to extend your indulgence to me in this matter.

I am, Sirs, yours faithfully,

Stamford-street, Sept. 12th, 1904. W. HENRY KESTEVEN.

A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—I beg to state that the paragraph in which my name was mentioned in the press was inserted absolutely without my knowledge.

I am, Sirs, yours faithfully,

ELLA SCARLETT SYNGE, L.S.A., M.D. Brux.

Cromwell-place, S.W., Sept. 8th, 1904.

AN APPEAL ON BEHALF OF MISS E. B. PELLATT, L.S.A.

THE treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram-road, Lee, S.E., acknowledges the receipt of the following sums additional to those already reported:—

	£	s.	d.
The Society of St. John the Evangelist	25	0	0
Mrs. Webb	10	0	0
Mrs. Benyon	5	0	0
Miss Harris	0	10	0
Miss J. N. C. Gray ...	1	1	0
Miss C. A. Nevill	1	1	0
Dr. W. Travers	1	1	0
Dr. Elizabeth Courtauld	5	0	0
Mr. F. D. Welch	1	1	0
Miss R. E. Crosse	2	0	0
Mrs. F. Garington	1	0	0
Dr. Mina L. Dobbie ...	2	0	0
"Tyneside"	1	1	0
Dr. Edith Shove	5	5	0
The Misses Fergusson ...	3	0	0
Mr. G. Jones	0	3	0
Dr. Maria Sharp	1	1	0
A Nurse	0	10	6
A Nursing Home, Blackington	0	10	0
A Blind Lady	0	3	0
Mr. and Mrs. J. E. Ransome	2	0	0
Dr. P. Frank	5	0	0
Dr. Minnie E. Bowlby	1	0	0
Miss A. Pellatt	1	0	0
Miss Marie Corelli ...	5	0	0
Mrs. Maun Taylor ...	3	3	0
Mrs. Nicholson	2	2	0
Dr. Florence A. Stoney	1	1	0
Dr. F. de Havilland Hall	2	2	0
The Misses Henderson	2	0	0
Mr. Leonard A. Bidwell	1	1	0
Dr. Gabrielle Breeze ...	1	1	0
Mrs. C. Jones	10	0	0
Mrs. Beaumont	5	0	0

THE CLIMATIC TREATMENT OF PHTHISIS.

To the Editors of THE LANCET.

SIRS,—Could you advise me in your next issue what part of Switzerland would best suit a delicate girl with incipient phthisis?

I am, Sirs, yours faithfully,

Sept. 5th, 1904. RUSTICUS.

*** Perhaps Davos or St. Moritz might be suitable.—ED. L.

THE PASSAGE OF FOREIGN BODIES THROUGH THE INTESTINE.

To the Editors of THE LANCET.

SIRS,—I remember two peculiar cases of passage of foreign bodies through the intestinal canal that occurred in my practice. A child was brought to me and when asked of what she was complaining I got the reply that she had swallowed her dolly; and I found it to be true, for next day she passed a little china doll an inch long. In another case, when the patient was asked what was the matter, I received the remarkable answer that she had swallowed a copper tea-kettle. This also proved to be true, for a day or two afterwards a beautifully made little copper tea-kettle was brought to me with spout and handle complete that her father had made out of a penny. No pains or ill-effects occurred in either case.

I am, Sirs, yours faithfully,

S. T. HUGGINS, L.R.C.P. Edin., M.R.C.S., Eng.

Compton-terrace, N., Sept. 9th, 1904.

To the Editors of THE LANCET.

SIRS,—*Re* the passage of foreign bodies through the intestines the three following cases may prove interesting. 1. A child, aged six years, swallowed a piece of broken glass, triangular in shape, its sides measuring, roughly, seven-sixteenths of an inch each, its depth being three-sixteenths of an inch. 19 hours afterwards the body was passed per rectum with little discomfort and very slight hæmorrhage. 2. A man, aged 30 years, swallowed a penny and for 16 hours he felt a certain amount of uneasiness; he then "lost it" and at the end of four days and 11 hours passed it per rectum without any trouble. 3. A child, aged four years, swallowed a halfpenny and though no urgent symptoms arose for two days he then began to vomit incessantly. An application of the x rays showed the coin in the œsophagus. The coin-catcher happened to push it on into the stomach and 22 hours after entering the stomach (four days and four and a half hours after it was actually swallowed) the halfpenny was passed per rectum after an enema, the first action of the bowels since the accident.

I am, Sirs, yours faithfully,

Sept. 11th, 1904. CHAS. J. GIBLING.

THYROID GLAND IN THE TREATMENT OF CANCER.

To the Editors of THE LANCET.

SIRS,—I shall be greatly obliged if any members of the profession would let me know through the medium of THE LANCET their experience of the administration of thyroid gland in the treatment of cancer. Dr. Robert Bell has given his views in a very pronounced way in a pamphlet he has lately written. I am, Sirs, yours faithfully,

Sept. 12th, 1904. M.D.

Mr. E. Peacock.—Our correspondent's attention is directed to an interesting article upon red light in the treatment of small-pox by Dr. T. F. Ricketts and Dr. J. B. Byles which appeared in THE LANCET of July 30th and the continuation of which appears in this number of THE LANCET. Dr. Finsen has also tried the treatment and has published articles thereon. Our correspondent is doubtless aware that the method was mentioned in the thirteenth century by Gilbertus Anglicus who stigmatised it as an old woman's fable and in the next century by John of Gaddesden who reported that he cured a member of the Royal family by wrapping him up in scarlet cloth.

County Coroner.—The black cockade is the badge of the royal house of Hanover worn by the servants of those who are in the service of the Crown. Coroners are now appointed and paid by county councils to perform local services; it may be, however, that they are still servants of the King and acting under his authority. We believe that strictly speaking only those who hold (or have held and are specifically allowed to retain their privileges on retiring) commissions in His Majesty's Navy and Army are entitled to the use of cockades.

Xylol.—The University of Liverpool came into existence as a university in 1903. Previously to that the medical school was at University College. The following are the numbers of medical students who entered for the full course from 1899: 1899–1900, 52; 1901–02, 50; 1902–03, 34; 1903–04, 111. This last figure was quoted to us by the dean of the University but was, we believe, subsequently corrected. We cannot at present put our hand on the modified figure.

Yellow Fever.—We should think, though we have not the book at hand to refer to, that "A Monograph of the Culicidæ or Mosquitoes," by F. V. Theobald, printed by order of the trustees of the British Museum, would give our correspondent the information which he requires. Three volumes of this monograph have been printed and the last one was reviewed in THE LANCET of June 25th, 1904, p. 1798.

Inquirer.—The points raised by our correspondent are purely legal. Assuming breach of the contract without good cause he would be entitled to damages, the measure of which would be subject to the opinion of the judge as to the length of notice which the terms of the contract might be considered to imply. So far as custom goes we believe three months' notice to be usual.

F. G. B.—There is, so far as we know, no redress for people who put themselves into the hands of quacks except by an action for obtaining money under false pretences and even then it is extremely difficult to prove in a court of law that the quack promised anything in particular.

Asthma.—The effect of climate on an asthmatic patient is so variable that it is very difficult to lay down any definite rules. For our correspondent's son we should suggest Bournemouth or St. Mary Church in England and Hyères or Cimiez abroad.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 15th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 9	30·06	S.W.	0·07	112	67	54	55	58	Overcast
,, 10	30·14	W.	...	111	67	48	50	53	Fine
,, 11	30·15	E.	...	111	67	50	56	59	Fine
,, 12	29·97	E.	...	73	61	56	55	58	Overcast
,, 13	29·88	S.	0·09	111	68	57	57	58	Dull
,, 14	29·75	S.W.	...	70	60	53	54	58	Overcast
,, 15	29·88	N.	0·13	99	65	53	54	55	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (24th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. G. Adamson: Clinique. (Skin.)

TUESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Clinique. (Medical.)

WEDNESDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Clarke: Clinique. (Surgical.)

THURSDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

FRIDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Clinique. (Ear.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1904, which was completed with the issue of June 25th, and the Title-page to the Volume, were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1904 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

During the week marked copies of the following newspapers have been received:—*Hertfordshire Mercury, Liverpool Daily Post, Yorkshire Post, Forfar Herald, Leamington Spa Courier, Scottish Reformer, Surrey Advertiser, Beverley Recorder, Manchester Evening Chronicle, &c.*

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Z.—Messrs. A. and M. Zimmermann, Lond.

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